

Global Mass Transit Report

Information and analysis on the global mass transit industry

MobiCloud

Promoting mobile cloud apps

MobiCloud is a project funded by the European Union (EU) to promote the use of mobile-based services in the cloud and support the emergence of a European ecosystem of mobile cloud application (app) developers.

It is a collaborative platform for developing, deploying and managing mobile cloud apps for business-critical scenarios such as public transport, field service or construction.

The reduction in the cost and complexity of mobile app development using cloud technologies is a strategic objective of the European Commission (EC).

The Commission therefore aims to enable and facilitate faster adoption of cloud computing throughout all sectors of the economy to cut information and communications technology (ICT) costs and, in combination with new digital business practices, to boost productivity, growth and jobs.

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Qinghai Xining Urban Transport Project

Developing western cities in China

The Qinghai Xining Urban Transport Project (QXUTP) is an initiative of the Chinese government under the Western Development Strategy, which was launched in 2000 to promote the socio-economic development of the western region of China. QXUTP is partially funded by the World Bank's International Bank for Reconstruction and Development (IBRD). It aims to promote mobility within the Xining Municipality, between the city centre and the western part of the city. The project was approved by IBRD in December 2013, and will continue until September 30, 2019. Box 1 provides a brief introduction to Xining in Qinghai Province.

Project background

Compared to cities in East China, cities in West China have experienced under-investment in public transportation. In 2009, while Eastern cities invested 24 per cent of their urban infrastructure capital on developing and improving public transport services and 41 per cent on road construction, Western cities invested only 6 per cent on public transport and 57 per cent on road construction.

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BRT in US

Upcoming projects present opportunities

Cities in the US are opting for bus rapid transit (BRT) systems, having realised the cost advantages these systems offer over conventional rail-based modes of transport. Although the concept of BRTs is still nascent in the US, several notable BRT systems have commenced service over the last decade in various cities including Cleveland, Eugene, Los Angeles, Pittsburgh, and Las Vegas. The Federal Transit Administration (FTA) has been a supporter of BRT projects and funds them under the New Starts programme. Currently, BRT projects, which together span at least 213 km, are under development.

Table 1 lists the key upcoming BRT projects in the US.

Upcoming BRT projects

Fresno Area Express Blackstone/Kings Canyon BRT (California) will serve North Fresno, Downtown Fresno, and the Southeast Growth Area. It will feature transit signal priority, real-time

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MobiCloud (contd...)

Project promoters

The MobiCloud consortium includes:

- **Appear** – Sweden-based developer of enterprise mobility software (leader)
- **Nettropolis** – Germany-based provider of software solutions for incident management
- **EsperantoXL** – the Netherlands-based system and software integrator
- **Costain** – UK-based construction and civil engineering company
- **COMIT Projects** – UK-based organisations comprising members and partners from the construction and technology industries, academia and other industry associations.

Box 1 provides an introduction to each of these consortium members.

MobiCloud is supported by the European Commission Directorate-General of Communications Networks, Content and Technology (DG CONNECT). It is co-funded by the EC under the ICT Policy Support Programme (ICT PSP) of the Competitiveness and Innovation Framework Programme (CIP) with a total budget of EUR4.45 million.

Project description

MobiCloud involves the development of a corporate app store infrastructure as well as technology to develop apps in a cost-effective manner. It is a context-aware app container on a Smartphone or tablet that can securely connect to corporate systems via a cloud-hosted platform. MobiCloud is also an online technology marketplace where end-users, application vendors, system integrators and cloud service providers can collaborate to develop end-to-end solutions with a high return on investment (ROI).

Methodology and work packages

The MobiCloud project follows the EU research project methodology and is divided into a number of work packages

Box 1 – MobiCloud consortium members

Appear is based in Stockholm, Sweden, with subsidiaries in the Netherlands and the USA. It specialises in developing software for innovative mobile services and in the use of “context” for enhancing the utility of mobile applications. It led the funding application for MobiCloud and is responsible for co-ordination of the project.

Appear is adapting its core mobile technology to support MobiCloud business trials. It is responsible for developing and documenting the software development tools that will be provided to third parties. Appear will also run one of the technology trials with a rail customer.

Costain is an international construction and civil engineering company based in Maidenhead in the UK. Its activities are organised into two divisions: natural resources and infrastructure.

Costain will provide the construction solution work packages – both development and trial. It will also provide industry guidance to help turn all four trial services into commercial solutions at the end of the project.

Nettropolis is headquartered in Bruchsal, Germany. It designs, develops and implements individual system solutions for public transport, traffic engineering, control and safety technology, and logistics. It focuses on customisable process optimisation tools.

Nettropolis will provide the City Transit solution development and trial. They have worked closely with public transport companies throughout Germany and Switzerland and have experience analysing the incidents and events that occur in daily operations. The trial will focus on improving communications between mobile staff and management of incident response.

EsperantoXL is a systems integrator headquartered in Utrecht in the Netherlands. It specialises in mobility solutions for public transport, security, logistics and retail.

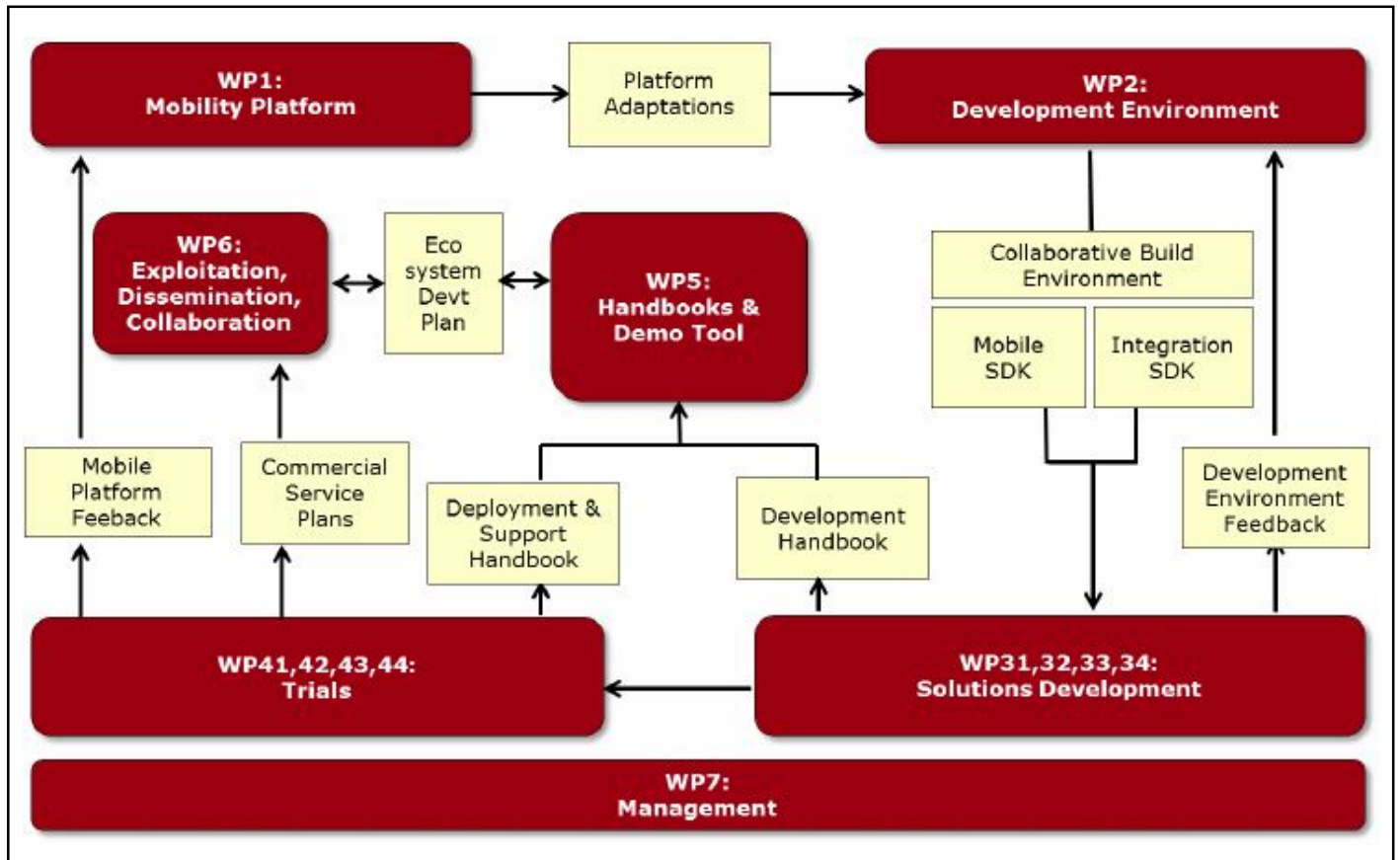
EsperantoXL will lead the field service solution development and trial work packages and provide handbooks and demonstration tools. This includes documentation of methodologies and best practices to lower barriers to developing, deploying and operating cloud mobile services for business solutions.

COMIT is headquartered in Bracknell in the UK. It brings together representatives from construction, technology, research and dissemination organisations in the form of the COMIT Community.

COMIT will deliver the exploitation, dissemination and collaboration parts of the project. This includes managing promotion and dissemination of project results as well as the development of commercial service plans for all proof-of-concept implementations.

Source: *MobiCloud project website*

Figure 1: Work Packages for the MobiCloud Project



Source: MobiCloud project website

as indicated in Figure 1. Each work package is led by a member of the consortium and has its own well-defined programme and list of deliverables.

Table 1 provides a list of the main work packages and the consortium member that is responsible for leading them.

Technologies

The three main technologies that MobiCloud builds upon are discussed below.

Cross-platform mobile technology

MobiCloud uses an advanced hybrid framework combining native and HTML5 mobile components for higher portability across devices (write once, run on iOS, Android, Windows). It allows developers to build, deploy and manage native and HTML5 applications.

The cross-platform framework opens up to developers the possibility to write their applications once and run them across a heterogeneous fleet of devices.

MobiCloud provides a secure device framework to execute their enterprise HTML5 applications even in occasionally connected modes. The framework contains intelligent modules allowing HTML5 applications to cache data for offline usage and access devices' resources (e.g. camera, accelerometer,

NFC etc.), thus significantly reducing development and maintenance costs.

Context technology

MobiCloud includes state-of-the-art context engine which collects real-time situational data (such as user id, role, location, task, and availability) and adapts the application and their availability to the user. It allows organisations to create their own private app stores and exercise increased control over the lifecycle and distribution of their applications.

In real-time, the organisational management can push updates, remove applications and change distribution criteria based on the precise context of their employees. MobiCloud can detect the context of use by collecting and analysing real-time user data (location, id, device type, etc.) and environmental data from different back-end systems and send a mash-up of the right information to the right user at the right time and place.

Cloud technology

Appear IQ is available as a cloud application store with local storage device, allowing offline usage in areas where network connectivity is poor. The cloud technology known as "PaaS" (platform as a service) facilitates the deployment of applications without the upfront cost and complexity of buying and managing the underlying hardware and software platforms.

Features

Table 1: Work Packages for the MobiCloud Project

Work Package Number	Work Package Name	Work Package Leader	Description
WP1	Mobility Platform	Appear	The technical adaptation of the existing Appear IQ mobility platform to support business trials
WP2	Development Environment	Appear	The development and documentation of the software development tools that will be provided to third parties
WP5	Handbooks and Demo Tool	EsperantoXL	Documentation of methodologies and best practices in order to lower the barriers to developing, deploying and operating cloud mobile services for business solutions
WP6	Exploitation, Dissemination, Collaboration	COMIT	Promotion and dissemination of project results as well as the development of commercial service plans for all proof-of-concept implementations
WP7	Management	Appear	The management, co-ordination and reporting activities necessary to carry out the project
WP31	City Transit Solution Development	Nettropolis	Not available
WP32	Rail Solution Development	Appear	Not available
WP33	Field Service Solution Development	EsperantoXL	Not available
WP34	Construction Solution Development	Costain	Not available
WP41	City Transit Trial	Nettropolis	Not available

Source: *MobiCloud project website*

Table 2: Project benefits for project partners

Partner type	Early Adopter Program	Associate Member Program
Mobile developer	<ul style="list-style-type: none"> Early access to the MobiCloud SDK to develop one's own applications 	<ul style="list-style-type: none"> Free copy of the MobiCloud development handbook Visibility on the Mobicloud store where the member is promoted as a certified developer
System integrator	<ul style="list-style-type: none"> Early access to the MobiCloud SDK and deployment & support handbooks 	<ul style="list-style-type: none"> Free copy of the MobiCloud development handbook Visibility on the MobiCloud store where the member is promoted as a certified integrator
End user	<ul style="list-style-type: none"> Early access to the MobiCloud mobility platform for trials (less than five users) 	<ul style="list-style-type: none"> Early access to MobiCloud deliverables, including app templates built for MobiCloud trials Access to the MobiCloud infrastructure to develop a mobile solution proof of concept (more than five users)

Source: *MobiCloud project website*

MobiCloud includes support for application development, testing, deployment and hosting as well as backend integration, security, scalability and storage. It is designed to efficiently mobilise enterprise back-end systems and includes a secure gateway to access the customer's on-premise applications behind the corporate firewall.

Software development toolkit (SDK)

In June 2013, the MobiCloud consortium announced the release of a new software development toolkit (SDK) that enables developers to create cross-platform and context-aware mobile workforce applications in the cloud.

The toolkit contains a number of predefined and re-usable application templates to easily create applications for transportation, construction and field service enterprise mobility projects.

The platform includes a mobile web SDK for creating HTML5 application components, native SDKs for creating cross-platform containers, as well as Java and REST SDKs for integration enhancements with back-end systems.

Showcase implementations

The initial demonstration scenarios of MobiCloud focus on industries where collaborative mobile apps can support a more efficient and green organisation. There are four showcase implementations addressing different industrial apps where end-users equipped with Smartphones or tablets can access a portfolio of services stored in the cloud. These include:

- City transit (KVV, Germany)
- Rail operations (Tågkompaniet, Sweden)
- Staff management (Tence, the Netherlands)
- Construction (Costain, UK)

For Tågkompaniet, MobiCloud provides resource visibility app (capability of finding the nearest colleagues), fault reporting app (allowing train drivers to document technical problems, attach pictures and assign to maintenance) as well as traffic disruption app (allowing staff to provide relevant information to passengers on board).

Benefits of MobiCloud

MobiCloud allows users to access a portfolio of services stored in the cloud. It provides a composite screen (mobile mash-up) that aggregates data from various IT systems. Depending upon context (location, role, skill set, colleagues, weather, task, etc.), the app can display different services, which react in real time to changes.

The MobiCloud platform enables easy development of cross-platform, cloud-based and context-aware applications and simplifies integration with existing back-end IT systems. This dramatically reduces both the cost and complexity of developing mobile applications.

With MobiCloud, it becomes feasible for small companies, not just global enterprise resource planning (ERP) vendors, to quickly develop and market mobile extensions of their existing

business apps. MobiCloud manages deployment, updates and security.

Partner Programme

MobiCloud has a partner programme for early adopters and companies willing to engage with the project and test their own mobile solutions.

Organisations wishing to join the MobiCloud ecosystem are encouraged to sign-up for the early adopter programme where they will gain access to the MobiCloud toolkit and test bed to build their own cross-platform cloud mobile app.

Potential partners include integrators, developers, software vendors, infrastructure and service providers, hardware vendors, etc.

Benefits for partners

- Free use of the development platform and SDK for system integrators and development partners.
- Unlimited use of the MobiCloud Technology Showroom for demonstrating applications and technology developed during the trial. The trial can be with real users. Commercial use of the platform is currently based on a SaaS model, priced per user per month.
- Free one to two-day training workshops for partner programme members on a quarterly basis where partners can learn how to enhance existing applications or develop new applications using the MobiCloud platform. The trainings will be provided for back-end integration, mobile web apps, as well as iOS and Android. More detailed training and consultancy will be available on a commercial basis.

Table 2 lists the benefits available to partners of the MobiCloud project.

App for public transport

In February 2014, it was announced that Karlsruhe Transport Company (Verkehrsbetriebe Karlsruhe or VBK), together with Nettropolis, has launched the Netto®MCD application for public transport companies.

The application captures operational incidents on the spot and promptly informs responsible field staff, who can then respond and take action if needed.

The application is expected to deliver

- operational cost savings, through control centre communications efficiency improvements
- cleanliness improvements through incident reporting
- better informed staff
- improved overall customer satisfaction

VBK is recognised worldwide for its forward-thinking tram-train integrated model, where city trains run in the region as fast trains and continue flexibly in the city as trams. Several public transport companies have expressed their interest in working with Nettropolis to enable their personnel to maximise the use of Smartphones at work. ♦

BRT in US (contd...)

bus arrival displays, off-board fare collection and dedicated lanes along around 20 per cent of the alignment. Low-floor compressed natural gas (CNG) or hybrid buses, including eight articulated buses, will be deployed. FTA approved the project in December 2010 and revenue service is expected to commence in mid-2015.

East Bay BRT (California) will serve Downtown Oakland and the existing San Leandro Bay Area Rapid Transit (BART) station primarily via the International Boulevard. It will feature exclusive transit lanes over approximately 75 per cent of the alignment, transit signal priority, real time bus information at stations and barrier-free proof-of-payment fare system. Service frequency during weekday peak periods will be five minutes. Under the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), FTA approved project development in December 2008. AC Transit completed the final environmental impact statement in January 2012. FTA issued a Record of Decision in June 2012. AC Transit anticipates initiating revenue operations in mid-2016.

Dyer Avenue Rapid Transit System (Texas) will extend from the existing Downtown Transit Terminal, travel through Downtown El Paso, the Five Points Transfer Center and the US Army Base at Ft. Bliss, and to the Northgate Transfer Center. The corridor will have traffic signal priority at 42 intersections, branded shelters, off-vehicle fare collection machines, and real-time arrival information at all stations. About 10 articulated buses will be acquired, which will operate six days a week (excluding Sundays) every 10 minutes during peak periods and every 15 minutes during off-peak periods. Under SAFETEA-LU, FTA approved project development in December 2011. The City of Paso anticipates start of revenue service in September 2015.

Montana Avenue Rapid Transit System (Texas) will serve the existing Five Points Transfer Center, Downtown El Paso, existing Eastside Transfer Center, the El Paso International Airport, and the proposed Far East Transfer Center. It will feature traffic signal priority at 34 intersections, branded shelters, off-vehicle fare collection machines, and real-time arrival information at all stations. About 12 articulated buses would be procured. These buses will operate six days a week (excluding Sundays), every 10 minutes during peak periods, and every 15 minutes during off-peak periods. FTA approved the project for development in April 2013. The City of El Paso anticipates receipt of construction grants in 2014-15 and 2015-16, and the start of revenue service in December 2016.

Van Ness Avenue BRT (California) will include dedicated transit lanes serving Van Ness Avenue, Mission Street, Union Street near Fort Mason and Fisherman's Wharf. The project will feature traffic pedestrian crossings. About 38 new buses will be purchased. These buses will operate every four minutes during weekday peak periods. Under SAFETEA-LU, FTA approved project development in December 2007. In July 2008, the San Francisco Metropolitan Planning Commission adopted a new long-range plan that identified the Van Ness BRT as a small starts priority project for the region. A draft environmental impact statement was published in November 2011. A Small Starts Grant Agreement (SSGA) is anticipated in early 2015 and revenue service is expected to begin in early 2018.

Silver Line BRT (Michigan) will be constructed along Division Avenue from the Grand Rapids central business district to the

60th Street/Division Avenue. It will feature stations with real-time passenger information, traffic signal priority and off-board fare collection. About 10 low-floored, hybrid-electric buses will be purchased. These buses will operate every 10 minutes during peak periods and every 15 minutes during off-peak periods. FTA approved project development in December 2007. Environmental assessment was completed in January 2011. ITP and FTA entered into a project construction grant agreement in October 2012 and revenue service is expected to begin in August 2014.

Michigan/Grand River BRT (Michigan) will serve State Capitol in Downtown Lansing, Michigan State University (MSU), Downtown East Lansing, and Meridian Mall in Meridian Township. The project would replace Route 1 of the Capital Area Transportation Authority (CATA) which has the highest ridership. The BRT will feature six centre, double-sided station platforms, 22 single-sided station platforms, 200 park-and-ride spaces, off-board fare collection and transit signal priority. A fleet of 17 new articulated buses will be purchased. In the opening year, bus service will be provided every 10 minutes during the morning peak period, six minutes during the evening peak period, and 7.5 - 10 minutes during the off-peak period. CATA completed an alternatives analysis in May 2011 and FTA approved project development in April 2013. CATA anticipates completion of environmental assessment in spring 2014, receipt of a Findings of No Significant Impact (FONSI) in July 2014, receipt of a Small Starts Construction Grant Agreement (SSGA) in April 2015, and start of revenue service in July 2016.

Jacksonville Transportation Authority (JTA) BRT Southeast Corridor (Florida) will run southeast of downtown Jacksonville to Southside Boulevard. It will connect to the BRT Phase 1 Downtown project, which is currently in the design stage. The project will feature stations with real-time passenger information system, transit signal priority, security system and off-board fare collection. A fleet of eight low floored, branded, diesel-hybrid vehicles will be procured. FTA approved project development as a very small start in November 2011.

JTA BRT North Corridor (Florida) will serve north of Downtown Jacksonville and Interstate 295. It will connect to the BRT Phase 1 Downtown project, which is currently in the design stage. The project will feature stations with real-time passenger information system and off-board fare collection. A fleet of eight low-floored, diesel-hybrid buses will be procured. These buses will operate seven days a week, with 10-minute headways during weekday peak periods, 15-minute headways during weekday off-peak periods and evenings, and every 30 minutes on weekends. FTA approved project development in December 2010. JTA completed the environmental assessment (EA) and FTA issued a FONSI in May 2011. In April 2012, JTA completed an environmental re-evaluation of four new stations and five relocated stations along Capper Road under a Supplemental EA. Later, FTA issued a FONSI for the entire project in August 2012. JTA anticipates start of revenue service in October 2014.

Northeast Corridor BRT (Ohio) will connect Downtown Columbus with the OhioHealth Medical Center in Westerville via Cleveland Avenue. It will feature traffic signal priority along a 14-km segment of Cleveland Avenue and special branding of vehicles and stations. About 13 new low floored, compressed natural gas (CNG) buses will be procured as part of the project. FTA approved the project in April 2013. COTA anticipates receipt of a SSGA in mid-2014, and the start of revenue service in September 2016.

Table 1: Upcoming BRTs in US

Project	City, state	Length in km (miles)	Stations	Total capital cost (USD million)	Funding/Financing sources (USD million)			Opening year ridership forecasts (average weekday trips)
					Federal	State	Local	
Montana Avenue Rapid Transit System	El Paso, Texas	27.04 (16.80)	16	43.36	34.59	8.77	-	2,200 (2016)
Dyer Avenue Rapid Transit System	El Paso, Texas	19.31 (12.00)	12	35.25	26.46	1.51	7.28	3,400 (2015)
East Bay BRT	Oakland, California	15.29 (9.50)	32	177.86	119.50	2.90	55.46	41,700 (2016)
Van Ness Avenue BRT	San Francisco, California	3.22 (2.00)	8	125.63	88.03	8.44	-	52,400 (2016)
JTA BRT North Corridor	Jacksonville, Florida	14.97 (9.30)	18	33.48	26.79	3.35	3.35	4,600 (2013)
JTA BRT Southeast Corridor	Jacksonville, Florida	17.86 (11.10)	7	23.88	19.10	2.39	2.39	4,700 (2014)
Silver Line BRT	Grand Rapids, Michigan	15.45 (9.60)	18	39.86	31.88	7.97	-	7,200 (2014)
Michigan/Grand River BRT	Lansing, Michigan	13.68 (8.50)	28	215.36	164.46	50.9	-	8,200 (2016)
Fresno Area Express Blackstone/Kings Canyon BRT	Fresno, California	25.27 (15.70)	27	47.24	37.79	9.45	-	7,200 (2015)
Northeast Corridor BRT Project	Columbus, Ohio	25.11 (15.60)	43	39.43	31.54	7.89	-	6,600 (2016)
Fourth Plain BRT	Vancouver, Washington	10.62 (6.60)	18	49.30	39.44	3.00	6.86	5,800 (2015)
Provo-Orem BRT	Utah County, Utah	16.93 (10.52)	15	159.37	74.99	84.38	-	12,900 (2016)
Ashland Avenue BRT Phase I	Chicago, Illinois	8.69 (5.40)	14	116.9	NA	NA	NA	NA

NA: Not available

Source: Capital Investment Program Project Profiles: FY 2014, USDOT FTA

Fourth Plain BRT (Washington) will operate in an exclusive at-grade right-of-way for 2.74 km and in mixed traffic for 7.89 km. The project includes the purchase of 10 new vehicles, which will operate every 10 minutes during weekday peak periods, every 15 minutes during weekday off-peak periods and weekends, and every 30 minutes on weekday evenings. FTA approved project development in April 2013. C-TRAN, Clark County Washington's public transportation agency, anticipates construction to start in mid-2014 and revenue service to start in October 2015.

Provo-Orem BRT (Utah) will operate from the Orem Inter-modal Center to the Provo Inter-modal Center, in an exclusive, at-grade right-of-way for approximately 9 km and in mixed traffic at-grade for an estimated 8 km. The project includes the purchase of 30 new BRT buses. These buses will operate every five minutes during weekday peak periods, every 10 minutes during off-peak periods, every 15 minutes during weekday evenings and every 20 minutes on Saturdays. The project was selected as the locally preferred alternative (LPA) in the region's fiscally-constrained long-range plan in May 2011. FTA approved project development in April 2013. UTA anticipates an SSGA and start of construction in 2014. Revenue service is expected to begin in late 2016.

Ashland Avenue BRT Phase I (Illinois) will run along the 8.7-km section of Ashland Avenue between Cortland Street (1900 North) and 31st Street (3100 South) in Chicago. It will feature 14 median stations, a dedicated centre lane for buses. About 50 specialised

BRT vehicles (with doors on both sides) will be procured including 19 hybrid and 31 diesel vehicles. The project's current estimated capital cost is USD116.9 million. CTA expects USD58.3 million from the federal small starts programme. CTA selected the project as a locally preferred alternative in April 2013. CTA anticipates completing the environmental review process with the receipt of a FONSI in the first quarter of 2014, and the receipt of an SSGA in late 2015.

Conclusion

The upcoming projects present opportunities for consultants, designers, construction contractors, equipment manufacturers, technology providers, etc. However, several projects face significant delays due to factors such as changes in the conceptual design and the opposition of special interest groups. For instance, the Van Ness BRT in San Francisco (SF) is now scheduled to open in 2018, two years later than the previous target of 2016 (originally target was 2012). Initially, the SF County Transportation Authority (SFCTA) faced significant challenges in reaching an agreement with Caltrans for the conceptual design. The SFCTA also ran into opposition over the removal of bus stops near a senior centre and eventually added an extra stop in each direction between Broadway and Vallejo Street, reportedly slowing movement along the line. The ultimate challenge lies in the timely execution of the projects so that all stakeholders remain interested in active participation to make the projects successful. ♦

Qinghai Xining Urban Transport Project (contd...)

The Western Development Strategy is expected to promote economic growth and urbanisation levels. Xining is in the early stage of urban development and the municipality has undertaken QXUTP to demonstrate the city's potential to grow as an exemplary city of sustainable transport practices, high quality of life and low greenhouse gas emissions.

Project components

The QXUTP comprises four major components – urban roads, public transport, intelligent traffic management, and institutional capacity building. These are described below.

Component 1 - Urban roads

This component will finance the construction of three short road sections (total length less than 10 km), which are part of the proposed integrated public transport corridor and necessary for providing high-quality public transport

services in the newly developed Xichuan District in the west of the city.

The roads will have provision for public transport services, non-motorised transport, underground utilities and environmental protection measures.

Component 2 - Public transport

This component will finance improvements to public transport infrastructure, operations, and complementary facilities on the proposed integrated public transport corridor on Wusixi Road.

Planned measures include the following:

- Construction of dedicated bus lanes and stops
- Provision of bus priority signals
- Installation and operation of a new bus dispatch system using an intelligent transport system
- Procurement of new buses
- Construction of a public transport interchange facility at the western end of Wusixi Road

Table 1: Distribution of QXUTP project costs and source of funds

Project component	Cost (USD million)	IBRD		Xining municipal government	
		Financing (USD million)	Share of cost (%)	Financing (USD million)	Share of cost (%)
Component 1: Urban roads	156.82	76.81	49.0	80.01	51.0
Component 2: Public transport	46.41	30.06	64.8	16.35	35.2
Component 3: Intelligent traffic management	9.39	9.02	96.1	0.37	3.9
Component 4: Institutional capacity building	3.81	3.81	100.0	0	-
Total baseline cost	216.43	119.70	55.3	96.73	44.7
Physical contingencies	18.23	0	-	18.23	100.0
Price contingencies	8.46	0	-	8.46	100.0
Total project cost	244.11	119.70	49.0	124.41	51.0
Interest during implementation	6.25	0	-	6.25	100.0
Front-end fees	0.30	0.30	100.0	0	-
Total financing required	250.66	120.00	47.9	130.66	52.1

Source: International Bank for Reconstruction and Development

Box 1: Xining, Qinghai Province

Xining is the capital of Qinghai Province in China. It has a population of 2.2 million and spans an area of 7,690 square km. Geographically, the city is surrounded by mountains, allowing it to grow in a very compact pattern around its central business district (CBD). The built-up area of the city covers merely 104 square km; it has a population of 1.2 million.

Over the last decade, the city has begun to expand east-west. Within the city, the Wusixi Road is the main east-west corridor linking the existing city centre to the western part of the city, the Xichuan New Area, which is envisaged to become a development hub in the years to come.

Xining is a key transportation node in West China, connected with other cities through railways and national and provincial highways. It is also a popular tourist destination due to its scenic landscape, unique cultural traditions and numerous natural and cultural heritage sites. Its main industries are wool spinning, textiles, fur, meat, milk, salt, and processing. The city is endowed with rich and relatively unexplored natural resources including mineral deposits, ground water, wind power and solar energy.

The quality of public transport services is declining because of inadequate investment in public transport infrastructure, outdated route plans, an aging fleet, and an increasing number of private automobiles. Pedestrian space has deteriorated due to increased motorisation, poor traffic co-ordination, unsafe roads and lack of parking facilities.

Under the Western Development Strategy, Xining experienced two-digit economic growth in the last decade. However, gross domestic product per capita and disposable income per capita (at USD4,307 and USD2,134, respectively) remain below the national averages (at USD4,496 and USD2,895, respectively), and lower than all provincial capitals in China except Lanzhou in Gansu Province. It is expected that continued support to the Xining Municipality, under the Western Development Strategy will help accelerate economic growth and lead to an increase in household income in Xining during the 12th five-year period (2011-15).

Source: International Bank for Reconstruction and Development

Component 3 - Intelligent traffic management

This component will finance the development of an intelligent traffic management system for the Wusixi Road public transport corridor. It will include the installation and operations of a traffic command centre, an area traffic control (ATC) system, and equipment for traffic monitoring, enforcement and information services.

Component 4 - Institutional capacity building

This component will improve the city's institutional capacity for urban transport planning and management through strategic studies to support the city's development goals; training and knowledge exchange for government officials and technical staff involved in urban transport planning, project management support including project monitoring and technical consultancies, etc.

Cost and financing

Like in the case of other cities in China, the financing plan for urban infrastructure investment in Xining is based on long-term debt with unknown risk of contingent liabilities.

The financing depends on special transfers from the upper levels of government and proceeds from urban land leases.

The total estimated cost for QXUTP is USD250.66 million, of which the IBRD loan component will be USD120 million; the remaining will be funded by the municipal government.

The loan will have a repayment period of 30 years, including a 5-year grace period.

Table 1 indicates the project cost by component and source of funds. ◆

NORTH AMERICA

FTA approves Durham-Orange LRT in North Carolina

The Federal Transit Administration (FTA) has approved project development for the Durham-Orange light-rail transit (LRT) line, which will span 27.5 km (17.08 miles) from Alston Avenue in eastern Durham to UNC Hospitals in Chapel Hill covering 16 stops.

The estimated investment for the project is USD1.34 billion (at 2012 prices), and part of it will be funded through a 0.5 per cent sales tax in Durham and Orange counties.

Environmental impact statements are due to be completed by January 2016. The project development phase is scheduled to take two years and be followed by three years of engineering design.

Construction is expected to take four to five years.

Five bidders qualify for California HSR construction

The California High-Speed Rail Authority (CHSRA) has received five qualified bids for a 96-km (60-mile) stretch on the Fresno-Tulare-Kern County line near Bakersfield. The contract is valued at USD1.5-2 billion.

The bidders are California Rail Builders (comprising Ferrovial Agroman US Corporation and Granite Construction Company); Dragados/Flatiron/Shimmick (comprising

Dragados USA Incorporated, Flatiron West Incorporated, and Shimmick Construction Company); Golden State Rail Partnership (comprising OHL USA Incorporated, and Samsung E&C America Incorporated); joint venture (JV) of Skanska USA Civil West California District Incorporated and Ames Construction Incorporated, as well as a JV of Tutor Perini Corporation, Zachry Construction Corporation and Parsons Transportation Group Inc.

The selected design-build firm will deliver the final designs for bridges, culverts, trenches and tunnels, utility relocations, aerial structures, grade separations, security and drainage. The

environmental clearance for the route is already underway and is expected to be received by spring 2014.

LATIN AMERICA

Brazilian consortium to construct BRT Metropolitan Alto Tietê in São Paulo

The consortium Projeto BRT Arujá, comprising Brazil-based companies Vetec Engenharia and Walm Engenharia e Tecnologia Ambiental, will construct the Metropolitan Alto Tietê bus rapid transit (BRT) system in São Paulo.

The BRT system will connect the municipalities of Arujá, Itaquaquecetuba, Poá and Ferraz de Vasconcelos.

The project involves constructing a 20.9-km network covering 26 stations at an investment of BRL337 million.

A fleet of 67 vehicles will be deployed, including 55 articulated buses and 12 conventional buses, operating at an average speed of 25 km/hr.

(1 BRL [Brazilian Real] = 0.50 USD)

Transantiago reports operating loss in 2013

Santiago's public transport operator, Transantiago, continued operating at a loss in 2013 because of higher diesel costs and new contracts with service providers.

The operator's costs increased from USD1.61 billion in 2012 to USD1.64 in 2013; however, revenue remained constant at USD997 million.

Transantiago has been in need of constant public funding and since 2007, the government has provided nearly USD10 billion into the operator.

ProInversión further delays award of Lima metro Line 2

The Peruvian private investment agency ProInversión, has again postponed the bid deadlines and award date for Line 2 of the Lima metro.

The earlier deadline for submitting the technical and economic bids was February 21, 2014 and the tender for the 35-year concession was expected to be

awarded by the end of February 2014. However, ProInversión has now postponed the deadline for submitting the bids to March 21, 2014, and the tender is expected to be awarded by March 28, 2014.

The prequalified bidders include:

- Consorcio Nuevo Metro de Lima, comprising Spain-based ACS Group and Fomento De Construcciones Y Contratas SA (FCC), Italy-based Impregilo S.p.A and AnsaldoBreda, and Peru-based Cosapi y JJC Contratistas
- Consorcio Metro Subterráneo de Lima, comprising Italy-based Astaldi, and Mexico-based Controladora de Operaciones de Infraestructura
- Consorcio Metro de Lima Linea 2, comprising Brazil-based Odebrecht, Construtora Andrade Gutierrez, Queiroz Galvão Construtora, and Peru-based Graña y Montero

SCT releases environmental impact statement for Mexico City-Querétaro HSR

The Secretariat of Communications and Transport for Mexico (SCT) has released the environmental impact statement for the proposed high-speed rail (HSR) line between Mexico City and Querétaro.

The line will extend 212.8 km from the refurbished Buenavista terminus in Mexico City to Querétaro, through Huehuetoca and San Juan del Río.

The project is expected to cost around MXN40.8 billion, and trains will operate at speeds of 300 km/hr.

ASIA PACIFIC

Bus service trial starts in Cambodia's Phnom Penh city

The City Hall of Phnom Penh and the Japanese International Co-operation Agency (JICA) have launched the first-ever public bus service in the capital city of Phnom Penh in Cambodia.

A one-month-long trial has commenced with the deployment of a fleet of 10 buses along the 7-km-long section of Monivong Boulevard.

The route is from the Old Stadium roundabout in the north to Chbar Ampov terminal in the south, covering

36 stops. The single-journey fare is USD0.37. Each bus will have the capacity to accommodate 35 passengers.

Philippines DOTC faces petition against procurement of MRT trains

A petition has been issued by Metro Rail Transit Corporation (MRTC) and Metro Rail Transit Holdings at the Makati City regional trial court, prohibiting the Philippines Department of Transportation and Communications (DOTC) from procuring 48 light-rail vehicles (LRVs) from China-based CNR Dailan Locomotive & Rolling Stock Company, for the Metro Rail Transit 3 (MRT-3) in Manila.

MRTC, which signed a build-lease-transfer (BLT) agreement in 1999 with DOTC for MRT 3, wants to stop the acquisition on account of violation of the agreement.

Currently, the 17-km long MRT-3 has a fleet of 73 coaches running from North Avenue in Quezon City to Taft Avenue in Pasay City.

Seven firms bid for bus terminal PPP in Parañaque city

Seven firms have expressed interest in building the PHP2.5-billion South-West bus terminal on the coastal road in Parañaque city under a public-private partnership (PPP).

The project includes a passenger terminal building, arrival and departure bays, public information system, ticketing and baggage handling facilities as well as park-ride facilities.

The seven Philippines-based companies that have purchased bid documents are San Miguel Corporation, Metro Pacific Tollways Corporation, Ayala Land Incorporated, D.M. Wenceslao and Associates Incorporated, Vicente T. Lao Construction, Egis Projects Philippines and Robinsons Land Corporation.

The South-West bus terminal is part of the PHP7.7-billion Integrated Transport System (ITS) project, which is among the seven major infrastructure projects worth a total of PHP184.2 billion approved by the National Economic and Development Authority in Philippines.

(1 PHP [Philippine Peso] = 0.02 USD)

Passenger services commence on Mumbai monorail Phase I

Passenger services have begun on Phase I of the 8.9-km-long section of the Mumbai monorail linking Wadala to Chembur and covering seven stations.

Construction was completed in five years by a consortium of India-based Larsen & Toubro (L&T) and Malaysia-based Scomi Engineering at a cost INR30 billion.

Scomi Engineering has supplied 15 air-conditioned four-car train sets with a capacity of 560 passengers, designed to run at a maximum speed of 80 km/hr.

The planned 11.2-km long Phase II will run from Wadala to Sant Gadge Maharaj Chowk.

Tenders invited to procure buses for Hubli-Dharwad BRTS

The Hubli-Dharwad bus rapid transit system (HDBRTS) Company Limited in the state of Karnataka in India has invited a global tender to procure 130 buses under the Jawaharlal Nehru National Urban Renewal Mission (JnNURM).

In December 2013, HDBRTS had invited global expressions of interest (EoIs) to procure 30 articulated and 100 standard-length bus rapid transit system (BRTS) buses. Although it failed to attract bidders because of stringent bidding conditions, there has been no relaxation of conditions in the new tender.

On the contrary, two other conditions – installation of intelligent transport system (ITS) applications and compliance with Urban Bus Specification-II issued by the Ministry of Urban Transport – have been added.

The HDBRTS project is being implemented under the World Bank-sponsored sustainable urban transport project.

Tamil Nadu to procure 1,000 new buses and deploy PIS

The Tamil Nadu state government in India has revealed plans to procure 1,000 new buses in 2014-15 at an estimated investment of INR2 billion under the Jawaharlal Nehru National Urban Mission-II (JNNURM-II) to replace the existing fleet of buses.

Further, the government will introduce an integrated public information system (PIS) to disseminate real time information of the Metropolitan Transport Corporation (MTC) buses to the passengers.

All buses will be fitted with global positioning system (GPS) units for tracking.

Initially, 500 bus stops will be connected to establish a public information system based on route maps, bus arrival details and other information.

(1 INR [Indian Rupee] = 0.017 USD)

Indian government approves Pune metro project

The Union Ministry of Urban Development (MoUD) in India has given an in-principle approval for Phase I of the metrorail project in Pune, Maharashtra.

It has advised the state government to update the system design in accordance with the revised detailed project report (DPR) prepared by the Delhi Metro Rail Corporation (DMRC).

The project will be implemented through a special purpose vehicle (SPV), jointly owned by the union and state government. Phase I will span 31.51 km along two corridors.

The first corridor will span 16.59 km from Pimpri-Chinchwad Municipal Corporation to Swargate and the second will span 14.92 km from Vanaz to Ramwadi.

The project is expected to be completed by 2021 at an investment of INR101.83 billion.

(1 INR [Indian Rupee] = 0.017 USD)

MMRDA shortlists four consortia for Mumbai metro

The Mumbai Metropolitan Region Development Authority (MMRDA) has shortlisted four consortia to provide consultancy services for the 33.5-km Colaba-Bandra-SEEPZ underground metro corridor in Mumbai.

The consortia are led by Hong Kong-based AECOM Asia, Germany-based DB International, Italy-based Geodata SpA and Japan-based Oriental Consulting Company.

Mumbai Metro Rail Corporation Limited (MMRCL) had issued an expression of interest (EoI) for general consultancy services in June 2013.

The estimated investment is INR230 billion.

(1 INR [Indian Rupee] = 0.017 USD)

Passenger services begin on Surat BRTS

Surat Municipal Corporation (SMC) in India has commenced passenger service on the 10-km-long bus rapid transport system (BRTS) in Surat from Udhna Darwaja to Sachin flyover.

At present, a fleet of nine air-conditioned buses run on the route at a frequency of 10 minutes. The 20-km-long second part of Phase I, called the Canal Corridor, will link Kharwarnagar to Sarthana Jakatnaka and Kharwarnagar to Dumas resort via University.

BMTC launches India's first electric bus; invites tenders for 50 hybrid buses

Bangalore Metropolitan Transport Corporation (BMTC) has launched India's first electric bus on the Majestic-Kadugodi Road in the city of Bangalore.

The bus will run on a trial basis for three months. It will feature closed-circuit television (CCTV) cameras, disabled-friendly design and battery that lasts for five hours (covering a distance of 250 km).

In addition, BMTC has invited tenders from global players for the procurement of 50 air-conditioned (AC) hybrid buses in Bangalore.

The union government has funded the procurement under the Jawaharlal Nehru National Urban Renewal Mission (JNNURM).

The buses will run 70 per cent on diesel and 30 per cent on battery. Each bus will cost between INR12 million and INR13 million.

(1 INR [Indian Rupee] = 0.017 USD)

CMRL receives first train for Chennai metro; Phase II to cost INR 360 billion

France-based Alstom has delivered the first two trains to Chennai Metro Rail Limited (CMRL) as part of a EUR243-million contract for the supply of 42 air-conditioned metro trains. The trains

have a maximum operating speed of 80 km/hr and utilise overhead catenary and regenerative braking systems.

Testing is now underway on the 5.7-km-long elevated section of Phase I from Koyambedu to Ashok Nagar, which is part of the 22-km-long east-west line from Chennai Central to St. Thomas Mount covering 17 stations.

Phase I also comprises a 23.1-km north-south line from Washermenpet to Chennai International Airport covering 17 stations. It is scheduled to be completed in 2015.

Of the total project cost of INR146 billion, the Japan International Co-operation Agency (JICA) is funding 59 per cent and the remaining 41 per cent is being shared equally between the state government and the union government. Till now, JICA has disbursed about INR80 billion for the project.

Meanwhile, CMRL has announced that the 60-km-long Phase II will be developed at an estimated cost of INR360 billion. It will be fully-underground and comprise three corridors.

(1 EUR [Euro] = 1.33 USD; 1 INR [Indian Rupee] = 0.017 USD)

MEGA approves updated DPR for Ahmedabad metro

The board of MetroLink Express for Gandhinagar and Ahmedabad (MEGA), developer of Ahmedabad metro, has approved the updated detailed project report (DPR) prepared by Delhi Metro Rail Corporation (DMRC).

The revised DPR studies development of two corridors as proposed by the state government in January 2014. The DPR has now been sent to the union government for further approval.

Under Phase I, a network of 34 km is planned to be constructed at an investment of INR100 billion.

The 16-km-long north-south corridor from Motera to Agricultural Produce Market Committee will cover 13 stations while the 18-km-long east-west corridor from Thaltej to the Vastral village will cover 16 stations.

Both corridors will intersect at Ashram Road. The 7-km stretch from

Shahpur to Kalupur railway station will be underground while the remaining 27 km will be elevated.

(1 INR [Indian Rupee] = 0.017 USD)

Korail launches tender to procure HSR trains

Korea Railroad Corporation (Korail) has launched the tender to procure 15 ten-car, high-speed transit (HSR) trains for deployment on the Wongang Line, which will connect Wonju with the east-coast city of Gangneung by 2017.

The trains will have a design speed of 330 km/hr and maximum output of 8.8 MW (powered by induction motors).

The first train is to be delivered by December 31, 2016; a batch of six trains is to be delivered by June 30, 2017; and a third batch of the remaining eight trains is to be delivered by October 31, 2017.

BMTA to procure 3,183 buses in 2014

The Bangkok Mass Transit Authority (BMTA) has revealed plans to award the contract to purchase 3,183 natural gas buses in May 2014.

Of these, 1,524 air-conditioned buses will be deployed on 108 routes in Bangkok.

The first batch of buses is expected to be delivered by end-2014.

Three bidders shortlisted for early works contract on Sydney CSELR

New South Wales (NSW) Transport has shortlisted three bidders for the early works contract of the new Central Business District and South East Light Rail (CSELR) project in Sydney.

The bidders include Australia-based companies Laing O'Rourke Australia Construction, Leighton Contractors, and a joint venture between Downer EDI Works and Parsons Brinckerhoff Australia.

The CSELR is a 12-km-long light-rail transit (LRT) line from Circular Quay and Central to Moore Park.

It is being undertaken as a public-private partnership (PPP) at an investment of AUD1.6 billion and is expected to be completed by 2020.

(1 AUD [Australian Dollar] = 0.89 USD)

NSW Transport shortlists three bidders for LRT project

Australia-based New South Wales (NSW) Transport has shortlisted three international consortia to build and operate two light-rail transit (LRT) corridors in Sydney spanning a total length of 12 km and linking Circular Quay and Central Station with the Sydney Cricket Ground (SCG) and Randwick Racecourse.

The shortlisted bidders are SydneyConnect, a joint venture (JV) of UK-based Serco Group, Australia-based John Holland and Australia-based Plenary Group; iLinQ, a JV of Australia-based Keolis Downer EDI Rail, UK-based Balfour Beatty Plc, Australia-based McConnell Dowell, Canada-based Bombardier Transportation and Australia-based Macquarie Capital and Connecting Sydney, a JV of France-based Transdev, Alstom Transport Australia and Australia-based Capella Capital.

The contract will cover the design, construction, services relocation, operations and maintenance (O&M) of the Sydney LRT corridors as well as the O&M of the existing Inner West Light Rail line in Sydney.

Tokyo Metro to provide technical assistance for Hanoi metro

Tokyo Metro Company Limited (Tokyo Metro) has signed a memorandum of understanding (MoU) with the Hanoi Metropolitan Railway Management Board (MRB) to provide technical assistance for the Hanoi metrorail project.

Under the deal, Tokyo Metro will provide railway technologies, engage in personnel exchanges and share relevant information with the MRB.

It also plans to host study tours and training for MRB employees in Tokyo and railway seminars in Hanoi.

In February 2013, the Japan International Co-operation Agency (JICA) had awarded a contract worth JPY300 million for the Hanoi Railway System Development Project to Tokyo Metro and Japan International Consultants for Transportation Company Limited.

(1 JPY [Japanese Yen] = 0.011 USD)

SMRT invites bids for Seoul metro Line 5 extension

Seoul Metropolitan Mass Rapid Transit Corporation (SMRT) has invited bids for a contract to prepare detailed design for the 7.7-km-long eastern extension of the Seoul metro Line 5 from Sangildong to Hanam.

A prefeasibility study for the extension was completed in 2011. Construction is expected to start in 2015 with commercial services is scheduled to begin in 2020.

The 52.3-km-long Seoul metro Line 5 is the world's third-longest fully-underground metro line (after the 67.3-km-long Guangzhou metro Line 3 and the 57.1-km-long Beijing metro Line 10).

EUROPE

OASA approves three bids for new AFC system

The Athens Urban Transport Organisation (OASA) has approved the final binding bids from three Greece-based consortia, Intrasoft International-Intrakat, Atese-Metka and Terna Energy-LG CNS, for provision of an automatic fare collection (AFC) system.

An electronic smart card will replace the paper tickets currently used and flat fares will be adopted compared to existing distance-based fares.

The total budget for the project, expected to be delivered in stages over 2014-2015, is EUR94 million.

The contractor will undertake the design, financing, installation, operational support, maintenance and technical administration of the system for a 12-year period.

OASA is yet to open financial bids for evaluation.

Amiens and Caen to jointly procure LRT equipment in 2015

The city councils of Amiens and Caen in France have agreed to jointly procure equipment for their first light-rail transit (LRT) lines. The move is expected to bring down procurement costs by up to 20 per cent.

In the initial stages of the partnership, the two cities will issue joint

tenders for studies on light-rail vehicle design and safety systems. Later, joint orders for rolling stock and maintenance equipment will be placed by the middle of 2015.

Nottingham expands electric bus fleet under Green Bus Fund

The Nottingham City Council has invested GBP3.2 million to procure 10 new electric buses, which will bring the size of the city's electric fleet to 50 by September 2015.

The council has also established a network of 60 charging points and more are planned over the next year.

The 10 buses are expected to result in fuel savings of approximately GBP250,000 and reduce emissions by around 40 per cent compared to conventional buses.

The bus procurement is partially funded by the national government's Green Bus Fund, which has enabled introduction of 213 low-carbon buses across England, including 31 fully-electric buses.

Funding will also be provided from the city's Workplace Parking Levy.

(1 GBP [British Pound] = 1.64 USD)

GNER to begin new HSR service by 2016

UK-based rail operator Great North Eastern Railway (GNER) is planning to introduce an hourly electric high-speed rail (HSR) service on the East Coast Main Line by December 2016.

Currently, GNER has submitted its formal application to the Office of Rail Regulation (ORR) for approval to operate the service.

The new service will reduce journey time between London and Edinburgh from an average four hours 20 minutes to three hours 43 minutes.

GNER plans to deploy updated Pendolino trains by Alstom, which will have nine coaches and the capacity to accommodate 500 passengers each.

Ankara metro Line M3 opens

The Electricity, Gas, Bus General Directorate (EGO) of Turkey has commenced service on Line M3 of the Ankara metro.

The line spans 15.4 km from Batýkent (terminus of Line M1) to OSB Tórekent in Sinçan covering 10 intermediate stations.

A consortium of Spain-based civil engineering group Comsa-EMTE and Turkey-based Açılım İnsaat has constructed the line at a cost of TRY216 million.

(1 TRY [Turkish Lira] = 0.46 USD)

Sweden's Västtrafik to introduce mobile ticketing

Västtrafik, the public transport company for the county council of Västra Götaland, has announced plans to introduce a new and simplified ticketing system based on a new app for mobile payments, a simplified range of ticket solutions and more user-friendly card readers.

ABC appointed for Network Rail's electrification programme

ABC Electrification, the joint venture between UK engineering groups Babcock and Costain and French transport firm Alstom, has been selected for Network Rail's two billion-pound National Electrification Programme.

Each party in the JV possesses an equal share and has been given two out of the six geographical areas within the programme, covering central and western England and Wales.

The contract for ABC is worth GBP900 million over the initial seven-year term, with an alternative to expand it for a further three years.

(1 GBP [British Pound Sterling] = 1.6 USD)

Norway's Flytoget launches tender for new high-speed trains

Flytoget, the airport express train operator in Norway, has launched the tender for eight new train sets. The estimated investment for the procurement is EUR120.29 million.

The trains will have a maximum speed of at least 210 km/hr and a minimum of 236 seats per train.

The contract is expected to be awarded in 2014 and the trains will be ready for testing in 2016.

The initiative has been undertaken to prepare for the increase in the number of passengers at Oslo Airport by 5 million by 2017.

Skopje extends deadline in tramway project tender

Macedonia's capital Skopje has extended the bidding deadline for a multi-million euro contract for the construction of a tramway track on a design-build-finance-operate-transfer basis to June 11, 2014.

The reasons for the extension of the deadline, initially set on May 8, 2014, were not disclosed. The value of the contract is estimated at EUR243 million, excluding the value-added tax.

The contract includes the establishment of a public-private partnership in the form of a concession for a period of up to 35 years and the procurement of at least 22 tram cars.

(1 EUR [Euro] = 1.37 USD)

DPP and Skoda looking for compromise on tram contract

Prague public transport company DPP is negotiating with Skoda Transportation in order to find a compromise solution for the contract to supply 15T ForCity trams.

The expected solution should be a set of partial measures and agreements, especially to lower DPP's annual costs for payment of the newly-purchased trams as well as maintenance and servicing costs.

Centro to tender fare system contract

Centro, the West Midland transport authority in the UK, has announced a 10-year framework contract for an end-to-end smart card system similar to Transport for London's Oyster card. The contract will have a starting value of GBP4.2 million and total value up to GBP360 million.

The contractor will have to bid for six lots, covering everything from the production of the smart cards to retail sale, backend systems and databases.

The framework is open to all public bodies in England, Wales, Scotland and Northern Ireland.

(1 GBP [British Pound] = 1.64 USD)

RENFE records 20 per cent ridership increase in 2013

The Spanish Ministry of Transport has announced a 20 per cent increase in ridership on the state-owned rail operator, RENFE's Alta Velocidad Española (AVE) high-speed rail (HSR) services during 2013, which recorded a ridership of 14.5 million passengers.

The increase has been attributed to the introduction of a flexible fare policy and opening of two new high-speed railway lines over the past year.

In February 2013, RENFE reduced all tourist class fares by 11 per cent and introduced more fare options such as flexibility in return tickets and new 10-trip AVE passes.

The first new HSR line connecting Barcelona with Figueres and the French border, was opened in January 2013; while the second, connecting Alicante with Madrid, was opened in June 2013.

Maastricht approves cross-border LRT to Belgium

The city council of Maastricht, Netherlands, has granted approval to plan and tender the city centre section of the 35-km-long cross-border regional light-rail transit (LRT) line from Maastricht to Hasselt, Belgium, covering 13 stops.

The route will include the existing bus routes, where possible. The contractor for the project is expected to be announced by early-2015.

The entire project is expected to require an investment of EUR300 million, of which the Dutch section of the route has a budget of EUR65 million.

For the Dutch section, the city council of Maastricht will provide EUR18 million and the Netherlands Ministry of Infrastructure and the province of Zuid-Limburg together will provide EUR47 million.

De Lijn will operate the line is currently preparing the tenders for infrastructure and vehicles.

Construction is due to be completed in early 2017 and commercial service is expected to begin by 2018.

(1 EUR [Euro] = 1.33 USD)

KVB and Rheinbahn issue joint tender for high-floor LRVs

Kölner Verkehrs-Betriebe AG (KVB), the transport authority of Cologne, and Rheinbahn, the public transport service provider in and around Düsseldorf, have issued a joint tender for the supply of 66 high-floor light-rail vehicles (LRVs) with an option for 12 additional vehicles.

The procurement is being managed by Rheinbahn, which will receive 46 of the vehicles, while the remaining 20 LRVs will be supplied to KVB.

The deadline for expressions of interest is March 18, 2014, and the first pre-series vehicles are due to be delivered in 2017.

The tender specifies an entry floor height of 950-1000 mm above the rail head, and requirement to meet German Federal Regulations on the Construction and Operation of Light Rail Systems (BOStrab).

Škoda delivers first tram in Konya, Turkey

Czech rolling stock manufacturer Škoda Transportation, has delivered the first modern bi-directional 100-per-cent low-floor 28T tram for Konya, Turkey.

The company will provide a total of 60 five-section trams under a contract worth EUR104.7 million, awarded in March 2013.

Each tram will be 32.5-metres-long, and have capacity for 364 passengers.

The Konya municipality is planning to expand the city's 21-km-long tram line, which currently deploys second-hand trams acquired from Köln.

(1 EUR [Euro] = 1.37 USD)

Municipal governments approve eastern extension of Paris LRT Line 1

The municipal governments of Seine-Saint Denis and Val-de-Marne have approved the 7.7-km-long eastern extension of Paris light rail transit (LRT) line T1.

The extension will connect the existing Réseau Express Régional (RER) terminus at Noisy-le-Sec to Romainville, Montreuil, and Rosny-sous-Bois before terminating at an interchange with RER Line A at Val-de-

Fontenay. It will cover 16 stations.

The project is expected to cost around EUR484 million and be completed by 2017.

Régie Autonome des Transports Parisiens (RATP) will procure 15 low floor light-rail vehicles to operate on the extension.

(1 EUR [Euro] = 1.37 USD)

LU invites expressions of interest for rolling stock procurement

London Underground's (LU) has floated a Official Journal of the European Union (OJEU) notice, inviting expressions of interest to supply 250 small-profile train sets for its Bakerloo, Central, Piccadilly, and Waterloo & City lines.

The invitation to tender is expected to be issued by early 2015.

The new trains would form part of the 'New Tube for London' (NTfL) programme for rolling stock, signalling and infrastructure modernisation.

Overall, the NTfL programme is expected to cost GBP9.86 billion (2013 prices).

(1 GBP [British Pound] = 1.64 USD)

MIDDLE EAST & AFRICA

MasterCard to launch mobile ticketing for Kenyan buses

US-based MasterCard in association with US-based companies Visa Incorporated and Google as well as Kenya-based Safaricom has launched mobile ticketing in Kenya based on MasterCard PayPass contactless technology.

The payment solution is scheduled to be launched for bus tickets by June 2014 and will be later extended for retail purchases, gas stations, etc.

Etihad Rail to commence service by end-2014

The United Arab Emirates (UAE)'s Etihad Rail has announced plans to commence operations on Phase I of the planned railway network by end-2014.

Phase I comprises 266-km-long railway line from Shan and Habshan to Ruwais in Abu Dhabi.

At present, construction is almost complete and testing is underway. A fleet of seven SD70ACS locomotives supplied by Electro Motive Diesel (EMD) will be deployed on the line.

Etihad Rail is developing a 1,200-km-long railway network which will be part of the Gulf Co-operation Council (GCC) Railway Network covering six countries – the Kingdom of Bahrain, the State of Kuwait, Oman, Qatar, the Kingdom of Saudi Arabia and UAE.

The estimated investment for the project is about AED40 billion.

(1 AED [United Arab Emirates Dirham] = 0.27 USD)

RTA plans Dubai metro extensions; opens two new stations on Dubai Metro

The Dubai Roads and Transport Authority (RTA) is currently planning three extensions of the Dubai metro network to add 24.1 km and 33 stations.

The Green Line will be extended by 20.6 km (12-km elevated and 8-km underground) from its current terminus at Jaddaf south to Academic City, covering 11 stations.

The Red Line will be extended 3.5 km from its current eastern terminus at Rashidiya to Mirdiff, and 15 km from its western terminus at Jebel Ali to the Expo 2020 site (near the Al Maktoum International Airport), covering 12 stations. Meanwhile, RTA opened two new stations – Al Jaddaf and Creek - on the Dubai metro Green Line.

Each station is elevated, 132-meters-long, 29-metres-wide, and have capacity of 11,000 passengers an hour per direction.

The stations will allow passengers to transfer to buses for Al Jaddaf, Zabeel First, Oud Metha, Umm Hurair Second, Port Saeed, Riga Al Buteen, Al Muraqqabat and Al Murar up.

The Al Jaddaf and Creek stations are expected to serve about 2,100 passengers and 1,400 passengers daily, respectively.

The Green Line spans 22.5-km from Dubai Airport Free Zone to Dubai Healthcare City covering 20 stations.

The RTA plans to extend the line by 20.6 km (12-km elevated and 8-km underground) from its current terminus at Jaddaf south to Academic City, covering 11 stations.

Jerusalem LRT extension approved

The Interior Ministry's District Building Committee has approved a 1.5-km extension of the light rail transit (LRT) network in Jerusalem from the intersection of Herzl Boulevard and Rabbi Zvi Yehuda Street, along Kanfei Nesharim Street, to the entrance of Har Nof, covering four stops.

The extension is part of a project, approved by the Jerusalem Regional Planning Committee in June 2013, to extend the LRT line by 21.9 km from Mount Herzl to Hadassah Ein Kerem Medical Centre by 2015.

The Transportation Ministry has allocated NIS1.1-billion for the project.

Currently, the Jerusalem LRT spans 13.8 km from Pisgat Ze'ev to Jaffa Road covering 23 stations. It is operated by CityPass – a consortium of Ashtrom (27.5 per cent), Alstom (20 per cent), Harel (20 per cent), Polar Investments (17.5 per cent), Israel Infrastructure Fund (10 per cent), and Veolia (5 per cent).

(1 NIS [New Israeli Shekel] = 0.27 USD)

Qatar Rail issues letters of award for Doha Metro Gold Line

Qatar Railways Company (Qatar Rail) has issued conditional letters of award (LoA) to the two contracting groups competing for the USD3.3-billion construction contract for the Doha metro Gold Line.

The letters will give the contractors a final chance to submit their commercial offers ahead of an expected award in March 2014.

The two groups competing for the contract are the consortium of Greece-based Aktor, Turkey-based Yapi Merkezi, Turkey-based STFA, India-based Larsen & Toubro and Qatar-based Aljaber Engineering, as well as the consortium of Germany-based Hochtief, Qatar-based Al-Jaber Trading, Athens-based Consolidated Contractors Company (CCC), Qatar-based Marbu Contracting Company and Qatar-based Lusail Hochtief.

The 212-km-long metro network is planned to be developed by 2026. The east-west Gold Line will extend east-west linking the Hamad International Airport to the Al Waab city via Doha. ♦

Global Mass Transit Report

Information and analysis on the global mass transit industry

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WMATA, US

Strategic plan and budget 2014-15

The Washington Metropolitan Area Transit Authority (WMATA), also known as 'Metro', operates the Metrorail, Metrobus, as well as the MetroAccess para-transit service.

Momentum strategic plan

In June 2013, the WMATA Board approved the Momentum strategic plan to guide Metro's decisions over the next 10 years and ensure that the system continues to support the region's competitiveness. The plan is supported by the Governors of Maryland and Virginia, and the Mayor of the District of Columbia. It emphasises safety and reliability, identifies steps to be taken for anticipated growth, and ensures that the full capacity of the transit network is utilised.

Momentum lays out seven Metro 2025 initiatives:

- **Operation of eight-car trains during peak periods** to maximise capacity of the existing Metrorail system. It will allow trains to carry 35,000 additional passengers per hour, adding capacity equivalent to constructing 18 new lanes of highways into Washington D.C.
- **Core improvements at high-ridership stations** to ensure safe and efficient operations, facilitate passenger movement from street to platform and allow transfers between lines. Proposed works include the addition of

escalator, stairs, and pedestrian passageways connecting platforms.

- **Metrobus Priority Corridor Network (PCN)** will add over 100,000 new daily boardings to the regional bus network through improved bus service, travel speeds, and reliability on the 24 regional corridors, which serve half of Metrobus ridership. Improvements will include transit signal priority, exclusive bus lanes, increased frequency and coverage area, improved customer information systems, additional MetroExtra service (limited-stop bus service), expanded fare payment options, added safety, security and incident response measures, and enhanced bus stops and facilities.
- **New Blue Line connections** will restore train frequency to six minutes during the peak period between the Pentagon and Rosslyn stations. Once the planned Silver Line opens, the Blue Line service will operate every 12-14 minutes (as opposed to the previous six minutes). The feasibility analysis is currently underway and two potential alternatives have been identified to create new connections. These include:
 - o Alternative 1: Addition of rail track to create a new connection between the Blue and Orange/Silver Lines.
 - o Alternative 2: Construction of a second Rosslyn station on the new Blue Line with an underground passageway to the existing Rosslyn station connecting the Orange and Silver Lines.

Both alternatives would add five more trains per hour during the peak period between the Pentagon and Rosslyn

Table 1: Planned Metrorail lines

Line	Description
Dulles Metrorail project (Silver Line)	<ul style="list-style-type: none"> • It will connect the existing Orange Line to Loudoun County, Virginia, via Tysons Corner and the Washington-Dulles International Airport. • It will span 37 km and cover 34 stations. It will be implemented in two phases. • Phase I will extend 18.7 km from West Falls Church to Wiehle Avenue in Tysons Corner by March 2014. • Phase II will extend 18.5 km and cover six stations. It will provide an extension to Route 772 in Loudoun County by 2018.
Beltway Line	<ul style="list-style-type: none"> • It will be a full loop around the Capital Beltway, connecting the existing Metrorail stations at White Flint, Wheaton, Greenbelt, New Carrollton, Largo Town Center, Branch Avenue, and Van Dorn Street. • Pedestrian connections will provide access to the existing stations.
Brown Line	<ul style="list-style-type: none"> • It will be a Red Line spur from Friendship Heights to Cherry Hill, connecting the existing stations at Friendship Heights, Foggy Bottom, Federal Triangle, Union Station, Georgia Avenue-Petworth, and Silver Spring. • A new park-and-ride facility is planned at the White Oak station.
Purple Line	<ul style="list-style-type: none"> • It will extend 28.5 km and link the Red, Green, and Orange lines of the Metrorail in the Maryland suburbs of Washington, D.C.

Source: Washington Metropolitan Area Transit Authority

Table 2: Details of Proposed WMATA Budget 2014-15

Particulars	2013-14 (USD million)
Operating Budget	
Metrobus	621.6
Metrorail	1,021.9
MetroAccess	113.4
Subtotal	1,756.9
Reimbursable Budget	
Operating Reimbursable Projects	42.5
Capital Reimbursable Projects	88.0
Subtotal	130.5
Capital Budget	
Capital Improvement Programme	1,137.3
ARRA "Stimulus" Programme *	0
Subtotal	1,137.3
Total Budget	3,000.2

Note: * All ARRA projects are scheduled for completion in 2013-14

Source: Washington Metropolitan Area Transit Authority

stations, providing capacity for at least 4,000 more passengers per hour per direction.

- **Next-generation communications** infrastructure to provide an integrated one-stop communication hub for passengers. Proposed improvements include passenger information display system (PIDS), new public address system, improved station signage, and mobile devices for station managers. Bus and train information will be integrated and real-time information displays will be provided at the most used stops.
- **Bus fleet expansion** involves the addition of 400 new buses by 2025 (in addition to those needed for service on the PCN) on 'Emerging Corridors'. Including PCN requirement, a fleet of 2,060 buses will be required by 2025.
- **Pocket tracks:** The initiative focuses on addition of special track work at key locations in the system to provide more flexibility to the system overall. These will allow metro trains to turn back in the direction they came from (short-lining) and also allow new trains to be stored until placed in revenue service.

Metrorail expansion

Table 1 provides details of the new Metrorail lines planned.

Funding

The federal government has assigned a special status to WMATA, given that 35 Metrorail stations serve federal facilities and nearly half of Metro's peak period commuters are federal employees. It contributes roughly 56 per cent of WMATA's capital costs.

Fares and other revenue currently fund 55.3 percent of the daily operations, while state and local governments fund the remaining 44.7 per cent.

Proposed budget for 2014-15

For FY 2015 (2014-15), a budget of USD3 billion has been proposed for WMATA, compared to USD2.7 billion budgeted for 2013-14.

The FY2015 budget will become effective on July 1, 2014. It includes an operating budget of USD1.73 billion for Metrorail, Metrobus, and MetroAccess services, a capital budget of USD1.14 billion to renew and improve infrastructure and a reimbursable budget of USD130 million for projects that are advanced and paid for by Metro's jurisdictions and outside partners.

Table 2 provides key figures from the budget.

The sources of funding for the budget include passenger fares and parking fees (USD903.8 million), state and local funding (USD1,172 million), federal funding (USD487.5 million), Metro 2025 fund (USD150 million), and other sources such as planned long-term financing, advertising, joint development leases, fibre optic revenues, etc. (USD286.6 million).

Conclusion

Metro's ridership is expected to continue growing and the agency is undertaking major projects to improve customer service, increase capacity and keep assets in a state of good repair.

The challenges it faces are huge, because of its size (it operates the second-largest heavy-rail transit system, the sixth largest bus network and the fifth-largest para-transit service in the country). Going forward, the agency is expected to remain highly significant in the US transit industry. ♦

(Part 1 of this write-up, carried in the February 2014 issue of the *Global Mass Transit Monthly*, focused on WMATA's organisational structure, operations and financials while this write-up focuses on the operator's future plans and proposed budget for 2014-15.)

Colombia Urban Transport Policy

Focus on reducing GHG emissions

Colombia aims to participate in about 300 emission reduction projects in the international carbon markets by end-2014. The Ministerio de Ambiente y Desarrollo Sostenible (Ministry of Environment and Sustainable Development / MADS) has given priority to the transport sector in studying the market mechanism that would best suit the national circumstances, enable cost-effective emission reductions, as well as generate social and environmental benefits. Clean Development Mechanism (CDM) is the first step in this direction. Colombia's climate change agenda is implemented under the National Development Plan 2010-2014 (NDP) based on the following four pillars:

- National climate change adaptation plan
- Colombian low emissions development strategy (LEDS)
- Reducing emissions from deforestation and forest degradation (REDD) strategy
- Strategy on financial protection for disasters

Figure 1 provides the ground transportation greenhouse gas (GHG) emissions in Colombia in 2009 as compared to the estimated emissions in 2040.

National Urban Transport Policy

Colombia's National Urban Transport Policy (NUTP) is based on the collaboration between the national government and the participating cities to improve the quality of life and increase economic productivity.

The NUTP has identified the following measures to be undertaken for public transport in the country:

- Creation of bus rapid transit (BRT) lanes
- Infrastructure maintenance and improvement
- Deployment of hybrid buses and electric buses
- Improvement in the organisation of public transport
- Renewal of public transportation fleet (of age over 20 years)
- Deployment of electric cabs

Policy guidelines

The NUTP measures are based on the following three policy guidelines:

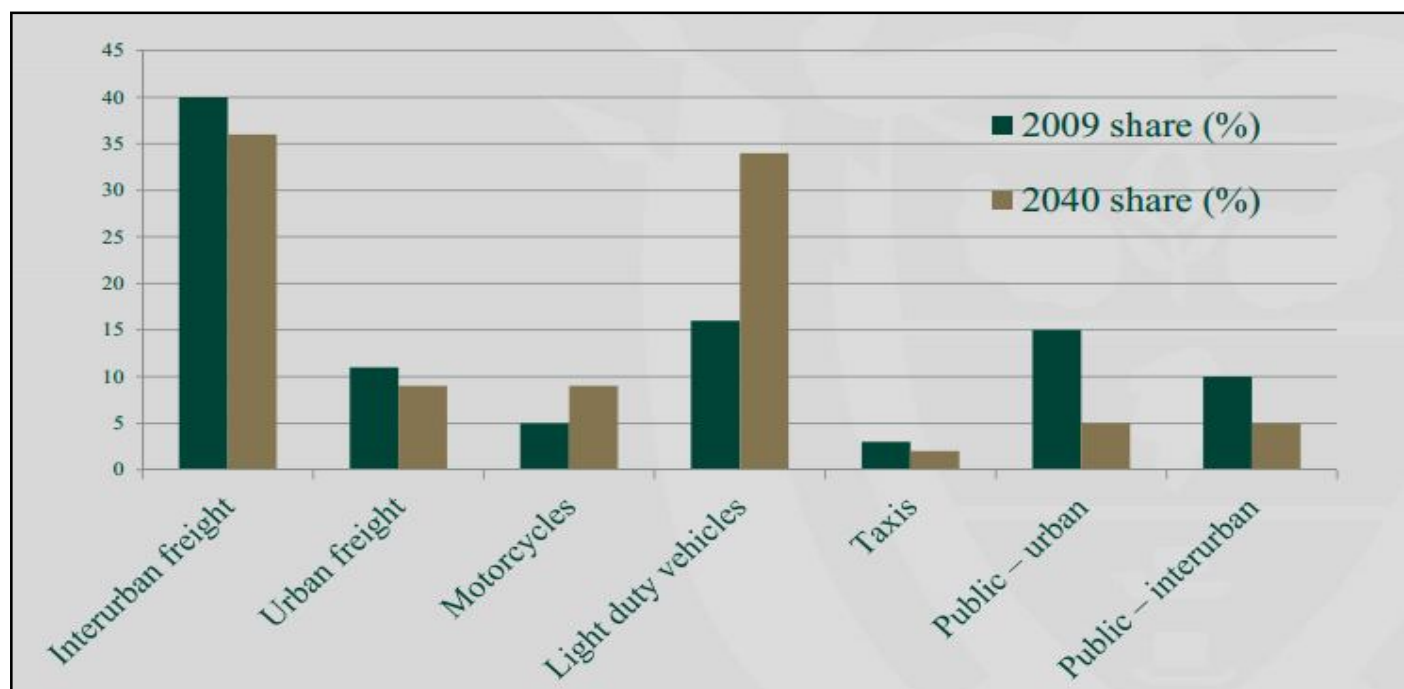
- Reducing the need to travel
- Shift to more environmentally-sustainable modes of transport
- Improvement in energy-efficiency of modes and vehicles

Working of the policy

The NUTP policy is being implemented through the construction of new public transport systems and reorganisation of existing public transport schemes. The national government has earmarked USD4.4 billion for 14 different transport sector CDM projects across the country. Of these, seven projects have achieved national approval, six projects are registered and one project is with the certified emission reductions (CER) unit.

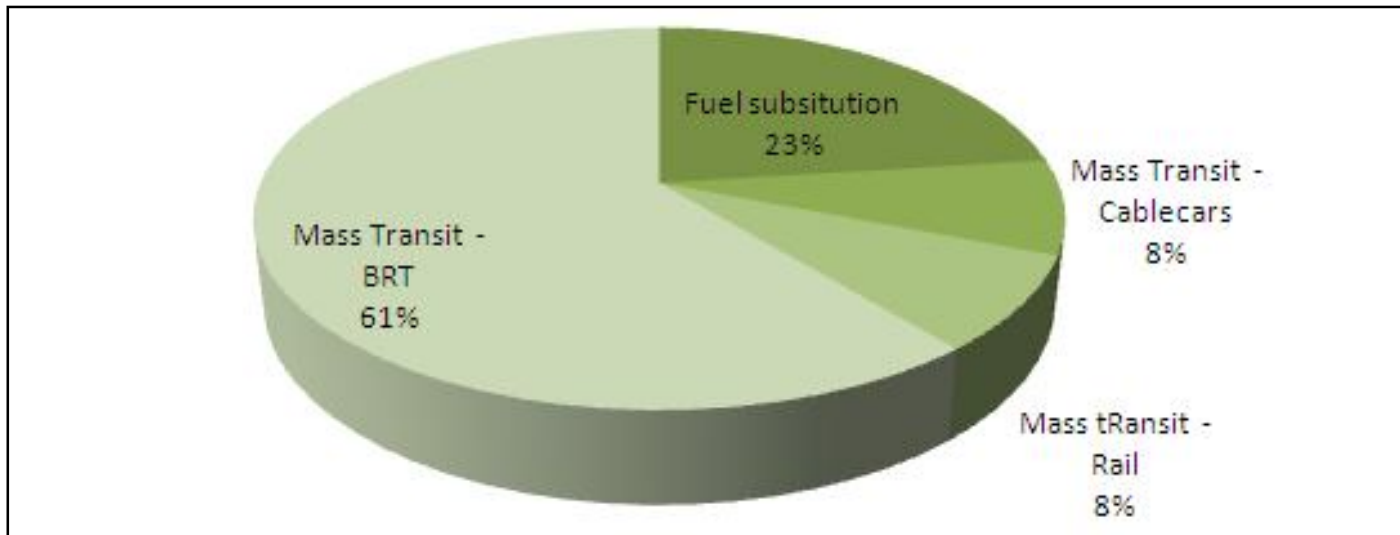
Figure 2 indicates distribution of the 14 CDM projects by type. Majority (61 per cent) of the projects are for the development of BRT systems.

Figure 1: Ground transportation GHG emissions (2009 compared to 2040 estimate)



Source: Partnership for Market Readiness

Figure 2: NUTP mass transit projects by type



Source: Partnership for Market Readiness

Policy components

The two components of NUTP are as follows.

Massive Integrated Transport System (SITM)

It aims to develop high-quality and sustainable BRT systems to improve mobility along strategic mass transit corridors; increase public transport accessibility for the poor; formulate integrated urban transport policies; and improve urban transport planning and traffic management. In August 2009, the World Bank approved a loan of USD300 million to the Republic of Colombia to fund the SITM project, which is estimated to require an investment of USD450 million.

The two components of the SITM project are:

- *Implementing capacity building:* It involves provision of technical assistance and policy advice to the government and participating cities’ municipal governments. It aims to strengthen the government’s capacity to formulate national urban transport programmes and strategies, improve the institutional capacity of transportation entities in participating cities to ensure adequate implementation of the BRT systems, strengthen the operational capacity of participating cities with respect to the implementation of urban development and transport strategies and provide support for overall project co-ordination, evaluation, supervision and implementation.

- *BRTS development:* It involves the construction of segregated transportation corridors in participating cities (including but not limited to, busways and repaved mixed-traffic lanes adjacent to busways); construction of about 20 km of segregated corridors in the North Quito South (NQS) Line of the Bogotá Transmilenio; defining of a new regulatory framework for the implementation of BRT in participating cities; resettlement of affected persons; as well as design and implementation of environmental management plans.

Current projects

There are currently six World Bank-funded BRT systems in operation and one under construction. Details are provided in Table 1.

Strategic Public Transport Systems (SETP)

It aims to achieve GHG emission reductions by implementing dedicated public transportation infrastructure, reducing excess supply, replacing obsolete buses with low-emission buses, optimising route planning and operations, as well as supporting non-motorised and less carbon-intensive modes.

The seven cities identified under this programme are Pasto, Santa Marta, Armenia, Popayán, Montería, Sincelejo and Valledupar. ♦

Table 1: BRT systems under SITM

System	City	Current status
TransMilenio BRT	Bogotá	Operational
Megabús BRT	Pereira, Dosquebradas	Operational
Mio-Metrocali	Santiago de Cali	Operational
Metrolínea mass transit system	Bucaramanga	Operational
Transmetro BRT	Barranquilla	Operational
Metroplús BRT	Medellin	Operational
Transcaribe BRT	Cartagena	Under construction

Source: Partnership for Market Readiness

Public transport investments in the UAE

Projects in Abu Dhabi and Dubai

The United Arab Emirates (UAE) has revealed plans to invest USD21 billion within the next six to seven years to develop railway infrastructure. Of this, almost USD10 billion will be invested to develop the Abu Dhabi metro, expand the Dubai metro and construct the Dubai tram system.

Other major public transport projects include the development of light-rail in Abu Dhabi, improvement of public bus services and the deployment of an automated fare collection (AFC) system.

Box 1 provides a background on UAE and two of its emirates - Abu Dhabi and Dubai.

Abu Dhabi

Plan Abu Dhabi 2030, published in 2009, envisages increasing the modal share of public transport to 33 per cent by 2030 and development of metro, light-rail and bus rapid transit (BRT) systems.

The proposed transit network will connect the central business district (CBD) with Sowwah Island, Reem Island, Saadiyat Island, Yas Island, Abu Dhabi International Airport and Masdar, Capital City District, Emerald Gateway, Zayed Sports City and Abu Dhabi National Exhibitions Centre.

Metro: The metro will span 131 km and serve the city of Abu Dhabi and the surrounding neighbourhoods of Saadiyat, the Yas Islands, and Al Raha Beach. Phase I will span 18 km from Zayed Sports City to Mina Port, covering 17 stations (13 elevated).

The study for the project is being conducted in three stages: feasibility study, preliminary design, and the final contract documentation and tender award. US-based AECOM and Parsons Brinckerhoff and Germany-based DB International are conducting the preliminary design study.

In June 2013, the Abu Dhabi Department of Transport (DoT) received expressions of interest from more than 400 companies for the project.

Some of the interested companies include Habtoor Leighton Group (UAE/Australia), Alstom (France), Arabtec (UAE), Balfour Beatty Rail (UK), Bam International (Netherlands), China Railway Corporation (China), Consolidated Contractors Company (Greece), Hyundai Engineering and Construction (South Korea), Impregilo (Italy), Indra (Spain), Samsung C&T (South Korea), Queiroz Galvao Construction (Brazil) and WorleyParsons (Australia).

DoT expects to award the first construction contract by April 2014.

Tram: The tram will have two lines. These are:

- Blue Line: The 15-km Marina Mall-Reem Island line will cover 24 stations.
- Green Line: The 13-km Karama-Saadiyat Island line will cover 21 stations.

Box1: Background

The **United Arab Emirates (UAE)** is a federation of seven emirates namely Abu Dhabi, Ajman, Dubai, Fujairah, Ras al-Khaimah, Sharjah, and Umm al-Quwain. It is located in the Middle East, bordering the Gulf of Oman and the Persian Gulf, between Oman and Saudi Arabia. Its capital is Abu Dhabi, which is one of the two centres of commercial and cultural activities (the other being Dubai). UAE has a population of 5.47 million (2013).

Abu Dhabi is the federal capital of the UAE and the largest of the seven emirates in the country. It lies on the border with the Kingdom of Saudi Arabia, the Sultanate of Oman, and the Arabian Gulf. The region has nine per cent of the world's oil reserves and five per cent of the world's gas reserves. It comprises 200 islands and has a coastline of 700 km. As of May 2013, its population exceeded 2.5 million inhabitants (according to estimates by the Abu Dhabi Statistics Centre).

Dubai is the business and cultural hub of the Middle East and the Persian Gulf region. Its economy is dominated by oil, financial services, tourism, real estate, and trade. In 2013, the population is estimated to have been 2.1 million inhabitants. This figure is expected to cross 3.1 million inhabitants in 2020 and 4.1 million inhabitants in 2025.

Source: Global Mass Transit Research

This project is currently in the planning stage.

BRT: The BRT corridor, known as the Orange line, will be a 14-km loop connecting 25 stations and serving northern areas such as Khalidiya and Al-Maryah. This project is currently at the development stage.

AFC for buses: The DoT has announced plans to roll out an advanced AFC system based on the smart card called Hafilat in 2014 for all buses in Abu Dhabi and Al Ain.

Ticket vending machines (TVMs) will be installed at the main bus stations and in shopping malls to allow commuters to buy and recharge their cards. The TVMs will accept credit cards and cash.

Further, 300 Swift reloader machines will be installed at bus stations, customer care centres, bus shelters, airport, shopping malls and hospitals, for passengers to recharge the smart cards. These machines will only accept bank notes.

For ticket validation, passengers will swipe the card at the entrance and exit. The onboard validator will automatically calculate and deduct the appropriate fare from the balance stored on the card.

Following the rollout of the AFC, the DoT has plans to equip the cards with features such as mobile or online payments, and extend the use to payments for taxi and ferry fares.

Other projects: DOT has recently invited tenders for various public transport projects. These include:

- Tender to supply, install, operate and maintain intelligent transportation system (ITS) for Al Ain, which was launched in February 2014. The last date for submission of bids is April 10, 2014.
- Information management strategy development project tender, which was launched in February 2014 and closed on March 9, 2014.
- Tender to develop, supply, test, install, commission, train, operate and maintain a multi-modal journey planner system, which was launched in January 2014 and closed on March 2, 2014.

Dubai

In November 2013, Dubai secured the bid to host the World Expo 2020. A total of 25 million visitors from around the world are expected to attend the expo.

The government has planned to invest USD8 billion to develop infrastructure including airport, seaport, roads and highways, power, water units, and urban transport.

Investments in urban transport aim to integrate various transport modes in the city and increase the modal share of public transport to 20 per cent by 2020 from 13 per cent in 2013.

Metro: As of January 2014, the Dubai Roads and Transport Authority (RTA) has planned three extensions of the Dubai metro network covering 33 stations.

Box 2 provides details of the existing network.

The **Green Line** will be extended by 20.6 km (12 km elevated and 8 km underground) from its current terminus at Jaddaf south to Academic City, covering 11 stations. Detailed designs for the extension are currently being prepared. This extension is planned to be completed by end-2015.

The **Red Line** will be extended by 3.5 km from its current eastern terminus at Rashidiya to Mirdiff, and 15 km from its western terminus at Jebel Ali to the Expo 2020 site (near the Al Maktoum International Airport), covering 12 stations.

The RTA is expected to appoint an external advisor in 2014 to study funding options for the extensions. The advisor will study the possibility of raising funds from banks and other private sources, assess whether the extensions can be structured as a public-private partnership (PPP) and explore the possibility of using a PPP to develop commercial space around three existing metro stations to raise funds for financing the extensions.

Several firms have expressed interest in the project. These include a joint venture (JV) of UK-based Ernst & Young and UK-based Atkins, Netherlands-based KPMG, a JV of US-based Deloitte and UK-based Arup, UK-based PricewaterhouseCoopers, US-based Jones Lang LaSalle, US-based Colliers International, US-based CB Richard Ellis (CBRE) and US-based Booz & Company.

In the future, the RTA aims to extend the existing lines (Red and Green) further and develop three new lines (Blue, Gold, and Purple) to build a total network of 221 km with 69 stations by 2030.

The expanded system will connect with the proposed Etihad Rail at three stations – Al Maktoum Airport, Dubai Land, and Central.

Box 2: Dubai metro

The metro network spans 74.6 km and is the longest fully-automated driverless metro system in the world. It commenced operations in 2009. The current network comprises two operational lines covering 47 stations.

Current metro network

Line	Route	Length (km)	Stations
Red Line	Rashidiya-Jebel Ali	52.1	29
Green Line	Dubai Airport Free Zone-Dubai Healthcare City	22.5	20
Total		74.6	49*

Notes: *Transfer stations counted multiple times.

The metro is designed to complement other modes of public transport such as buses, taxis, and water-buses. It is an important link to the airport. The interchange stations provide the facility to transfer to buses and water-buses.

Source: Dubai RTA

Table 1: Planned network for Al Sufouh Tram

Phase	Route	Length (km)	Stations
Phase I	Dubai Marina to the Mall of the Emirates	11.0	13
Phase II	Spur line to link the Jumeirah Beach Road with the Mall of the Emirates.	3.5	6
Total		14.5	19

Source: Dubai RTA

Union Metro station transit oriented development (TOD):

In 2014, the RTA will initiate the process to pre-qualify the private investor to design, construct, finance, operate and maintain the Union metro station in Deira under a 30-year lease from the RTA. Union station, where the Red and Green metro lines intersect, is one of the busiest stations on the metro network. It is also close to the Dubai Creek and has connections with water taxis and local buses.

UK-based Ernst & Young is the project's financial advisor and has conducted a feasibility study, while UK-based Atkins is the technical advisor and has developed the initial architectural designs.

Tenders are expected to be issued in March 2014, the preferred bidder is to be announced by August 2014 and negotiations are to be completed by end-2014.

Al-Sufouh Tram:

The 14.5-km tram line will be the first catenary-free tramway in the Middle East. It will link the Dubai metro (at three stations along Sheikh Zayed Road) and the Palm Jumeirah monorail. The project is being developed in two phases. Table 1 provides the project details.

The estimated investment of Phase I is USD1.08 billion. Phase I is expected to open in November 2014 and serve about 27,000 passengers daily.

UK-based Serco secured the AED105-billion contract to operate the tramway for a period of 75 months (including the preparatory time of 15 months).

In February 2012, the Government of Dubai secured a 13-year financing facility of USD675 million to finance Phase I. Citigroup, Deutsche Bank and HSBC were mandated as lead arrangers and underwriters for the financing.

The first part is a loan of USD401 million with a term of 10 years (starting from 2015). It is guaranteed by the government export credit agencies of Belgium (ONDD) and France-based COFACE.

The second part is an Islamic Ijara facility of USD274 million, split equally in USD and AED, to be repaid over three years.

A consortium of France-based Alstom and Belgium-based Besix has secured the contract to maintain the system for 13 years. Alstom will also supply 25 Citadis 402 trams (11 trams for Phase I and 14 trams for Phase II). Each tram will be 44 metres long and have capacity for 408 passengers across different classes.

Alstom is also responsible for track laying, signalling,

communications systems, integrated operation control centre, platform screen doors and ticketing system.

The signalling system will be a modified version of the Urbalis communications-based train control (CBTC). In December 2013, Alstom delivered the first 11 trams.

Airport automated people mover (APM):

The airport APM will be elevated and extend 1.5 km. In November 2012, Canada-based Bombardier Transportation secured the contract to design and build the system in two years. It will provide project management, systems engineering and integration, testing, and commissioning services.

The company will also supply 18 Innovia APM 300 cars equipped with Cityflo 650 CBTC technology for driverless operation.

New buses and bus routes:

The RTA, along with the United Nations Environment Programme (UNEP), has launched a strategic plan to deploy 60 bio-fuel buses over the next three years. In January 2014, 10 bio-fuel buses were introduced.

In addition, the RTA is conducting studies to develop new bus routes in areas where there is limited or no bus service. These areas include Motor City, Dubai Sports City, International Media Production Zone, Dubai International Academic City, and Dubai Outsource Zone.

Fare system:

The RTA plans to extend the service of its smart cards, called Nol cards, to taxis operating under its supervision. Currently, the cards are used on the metro and buses.

Command-and-control centre:

The RTA is planning to build a command-and-control centre by 2017 to monitor all public transportation systems and effectively manage traffic congestion. It is currently engaging consultants to design the facility and the contract for development of the centre is expected to be awarded in 2015.

The way forward

The Government of UAE continues to emphasise development of transport infrastructure to spur growth in the region. With Dubai winning the bid for World Expo 2020, the pace of development has increased. This is favourable news because the country has been on track in the delivery of high-class public transport systems. ♦

Philippines: Public utility vehicles in Metro Manila

The urban transport sector in Metro Manila primarily comprises an urban road network and public transport system. EDSA is Metro Manila's main thoroughfare stretching around 24 km and connecting the north and south of the metropolis. Its average annual daily traffic (AADT) is over 156,000 vehicles. The following table provides details on the number of franchises and authorised units of road-based public transportation in Metro Manila.

Table: Public utility vehicles in Metro Manila

Type of service	As of December 2011		As of December 2012		As of December 2013	
	No. of franchises	No. of units	No. of franchises	No. of units	No. of franchises	No. of units
City Buses	522	7,161	391	5,392	391	5,392
Inter-Regional Buses	1,215	8,872	1,212	8,561	1,212	8,561
Mini city-buses	2	30	-	-	-	-
Mini inter-regional buses	50	103	32	62	32	62
Public utility jeepneys	57,537	60,149	57,931	60,876	57,935	60,880
Taxis	15,924	21,801	17,487	24,314	17,488	24,315
Vehicles for hire	5,227	5,498	9,255	10,185	9,255	10,185
Shuttle transport	1,156	2,198	1,179	2,332	1,179	2,332

Source: Philippines Department of Transport and Communications

US: Average Age of Urban Transit Vehicles

Over the past five years, the US has been investing in rail fleet procurement. This has translated to the reduced average fleet age of both light-rail and heavy-rail vehicles. The following table gives the average age of urban transit vehicles in the US.

Table: Average Age of Urban Transit Vehicles in US (in years)

Vehicle Type	2008	2009	2010	2011	2012
Transit rail					
Commuter rail locomotives [*]	18.6	18.3	19.4	17.6	17.8
Commuter rail passenger coaches	18.7	18.3	18.9	19.4	20.0
Commuter rail self-propelled passenger cars	17.9	18.5	19.5	19.7	18.5
Heavy-rail passenger cars	20.7	19.0	18.7	19.2	19.8
Light rail vehicles (streetcars/trams)	16.4	16.4	16.8	16.5	16.2
Transit bus					
Articulated	6.6	6.6	6.5	6.5	7.0
Full-size (<35 seater)	7.7	7.8	7.8	8.0	8.0
Mid-size (25-35 seater)	6.7	6.8	6.7	6.4	6.4
Small (>25 seater)	4.4	4.3	4.2	4.2	4.3
Trolley	9.0	9.4	10.4	11.4	12.4
Other					
Vans	3.3	3.2	3.4	3.5	3.6
Ferry boats	20.1	19.3	20.5	20.3	21.0

Note: ^{*} Locomotives used in Amtrak intercity passenger services are not included

Source: Research and Innovative Technology Administration (RITA)

US: State-wise ridership of Amtrak

The national railroad passenger corporation, Amtrak, is a publicly funded railroad service operator, providing intercity passenger train service in the United States. It connects over 500 destinations over 46 states in US, in addition to three Canadian provinces. Amtrak also is the operator of choice for state-supported corridor services in 15 US states and for four commuter rail agencies. The following table gives the state-wise ridership of Amtrak.

Table: State-wise ridership of Amtrak

State	Passenger footfall at stations (no.)		% change
	2011-12	2012-13	
Alabama	67,233	66,192	-1.5
Arizona	104,381	107,072	2.6
Arkansas	41,358	41,183	-0.4
California	11,990,378	12,218,615	1.9
Colorado	205,942	198,216	-3.8
Connecticut	1,784,598	1,757,210	-1.5
Delaware	752,528	751,284	-0.2
Florida	1,160,973	1,120,959	-3.4
Georgia	201,082	192,085	-4.5
Idaho	8,815	9,196	4.3
Illinois	5,070,644	5,178,600	2.1
Indiana	150,735	154,918	2.8
Iowa	59,169	59,825	1.1
Kansas	49,498	50,146	1.3
Kentucky	10,581	11,016	4.1
Louisiana	257,973	249,801	-3.2
Maine	337,717	356,045	5.4
Maryland	1,965,730	2,004,985	2.0
Massachusetts	3,128,875	3,115,816	-0.4
Michigan	874,341	908,878	4.0
Minnesota	181,535	175,022	-3.6
Mississippi	115,581	113,695	-1.6
Missouri	739,256	774,009	4.7
Montana	149,813	148,612	-0.8
Nebraska	46,456	49,408	6.4
Nevada	81,142	92,965	14.6
New Hampshire	213,439	226,352	6.0
New Jersey	1,670,084	1,649,552	-1.2
New Mexico	130,957	129,551	-1.1
New York	11,554,315	11,639,454	0.7
North Carolina	938,181	975,645	4.0
North Dakota	154,864	154,800	-0.04
Ohio	163,909	161,986	-1.2
Oklahoma	92,540	86,374	-6.7
Oregon	946,530	936,297	-1.1
Pennsylvania	6,166,064	6,296,688	2.1
Rhode Island	874,436	851,856	-2.6
South Carolina	243,669	239,650	-1.6
Tennessee	77,155	80,363	4.2
Texas	465,300	444,954	-4.4
Utah	52,856	55,283	4.6
Vermont	96,974	100,829	4.0
Virginia	1,466,965	1,607,271	9.6
Washington	1,322,652	1,281,739	3.1
Washington, D.C.	5,013,991	5,033,392	0.4
West Virginia	54,965	56,112	2.1
Wisconsin	947,098	927,782	-2.0

Source: Amtrak

NORTH AMERICA

Sound Transit to invest USD1.1 billion in 2014

Sound Transit, Seattle's public transport agency, has approved an investment of USD1.1 billion under its 2014 budget. The works include construction of the University Link (USD146.9 million), final design of the East Link (USD141.1 million), tunnelling and station construction for Northgate Link Extension (USD138.6 million), continued project implementation for light-rail extensions from South 200th Street to Federal Way and from Northgate to Lynnwood (USD31.2 million), development of the First Hill Streetcar (USD21.8 million), alternative analysis and community engagement for the Tacoma Link expansion (USD2.7 million) as well as completion of planning studies for high-capacity corridor and updation of the Long Range Regional Transit Plan (USD15.1 million).

FTA extends USD670 million grant for LRT in LA

The US Department of Transportation's (USDOT) Federal Transit Administration (FTA) has sanctioned a USD670-million construction grant under the Capital Investment Grant (New Starts) Program to Los Angeles County Metropolitan Transportation Authority (LACMTA) to develop the 3.2-km (2-mile) Regional Connector light-rail transit (LRT) line in downtown Los Angeles (LA) and purchase four light-rail vehicles (LRVs). The project is estimated to require an investment of USD1.4 billion. It has received USD64 million from USDOT and a loan of up to USD160 million from USDOT's Transportation Infrastructure Finance and Innovative Action (TIFIA) loan programme. The remaining amount will be funded with state and local resources.

The Regional Connector LRT will be underground and connect the existing Metro Gold line in Little Tokyo with the Exposition and Blue LRT. With the completion of the project in 2020, the three existing LRT lines will be reconfigured into two lines, one running north-south and another east-west. Ridership is estimated to be 60,000 passengers daily.

Florida state finances rail station at Orlando airport

The state government of Florida has announced plans to extend USD215 million for the construction of a new railway station at the Orlando International Airport. The station will be served by the SunRail commuter rail (under-construction) and the Florida East Coast Railway's (FEC's) All Aboard Florida inter-city services from Orlando to Fort Lauderdale and Miami (construction to begin in 2014). All Aboard Florida will pay annual rent of USD2.8 million to the airport and up to USD1.5 for each train passenger travelling to the airport station from Orlando.

USDOT sanctions USD600 million under TIGER grant for 2014

The US Department of Transportation has announced that USD600 million will be made available to fund transportation projects across the country under the sixth round of the Transportation Investment Generating Economic Recovery (TIGER) competitive grant programme. Since 2009, the TIGER programme has awarded USD3.5 billion to 270 projects in all 50 states, the District of Columbia and Puerto Rico.

LATIN AMERICA

IBRD approves grant for sustainable transport in Mexico

The World Bank's International Bank for Reconstruction and Development (IBRD) has approved a USD5.38-million grant to the Government of Mexico to carry out a sustainable transport programme which reduces greenhouse gas emissions by promoting the use of low-energy transport modes in the long-term and encouraging policies in favour of sustainable transport projects. The specific projects under the programme include urban transport planning in Ciudad Juárez and Puebla, as well as implementation of bus rapid transit (BRT) systems in Monterrey, Nuevo León state, León in Guanajuato state and Ciudad Juárez.

Cabei to fund third stretch of Tegucigalpa BRT

The Central American Bank for Integration (Cabei) will invest USD10 million for the construction of the third stretch of the Trans-450 bus rapid transit (BRT) system in Tegucigalpa, Honduras. The BRT is expected to serve around 61,449 passengers daily.

ASIA PACIFIC

AFD to provide loan for Kochi metro Phase I

France-based financial agency Agence Française de Développement (AFD) has signed a project agreement with India-based Kochi Metro Rail Limited (KMRL) for a EUR180-million 20-year loan for the development of 25.6-km-long Phase I from Aluva to Petta covering 23 stations. The loan amount will be disbursed in instalments, with the first instalment of EUR20 million to be provided by January 2015. The line is expected to be operational by March 2016 and serve an estimated 381,868 passengers by 2016, 468,130 passengers by 2020 and 539,427 passengers by 2025.

(1 EUR [Euro] = 1.33 USD)

Philippines Government approves VGF for LRT Cavite Extension

The Philippines Department of Transportation and Communications (DOTC) has approved a funding of PHP6 billion as viability gap funding (VGF) for the extension of the light-rail transit (LRT) Line 1 under the Cavite Extension project in Manila. The firms that have submitted bids for the public-private partnership project are Spain-based Globalvia Inversiones, Germany-based Ecorail Transport Services Incorporated, and Philippines-based companies DMCI Holdings Incorporated, Light Rail Manila (LRM) consortium, MTD Philippines Incorporated, SMC Infra Resources Incorporated and Megawide Construction Corporation.

The project involves the extension of Line 1 to the south by 11.7 km (10.5 km elevated and 1.2 at-grade) from Baclaran to Bacoor covering eight stations. It is expected to increase the average weekday ridership on Line 1 from 560,000 passengers to 820,000 passengers.

(1 PHP [Philippine Peso] = 0.02 USD)

India's interim union budget finances Kochi metro

India's interim union budget has allocated INR4.62 billion to the Kochi metro project. The funds include INR2.33 billion as equity, INR0.67 billion as interest-free subordinate debt and INR1.62 billion as a loan. Kochi Metro Rail Limited (KMRL) is developing the 25.6-km-long metrorail line from Alwaye to Petta. The project is expected to cost about INR55.37 billion and be operational by March 2016. The annual ridership is estimated to be 381,868 passengers by 2016, 468,130 passengers by 2020 and 539,427 passengers by 2025.

(1 INR [Indian Rupee] = 0.017 USD)

Philippines government funds AFCS project in Manila

The Philippines Department of Budget and Management (DBM) has released two multi-year obligational authority (MYOA) to the Philippines Department of Transportation and Communications (DOTC) to grant PHP3.16 billion for the automatic fare collection project in Manila and for upgrading the Mactan-Cebu International Airport (MCIA). The MYOA will allow a department or agency to obligate funds for more than a year only if the total cost of the particular project is not fully covered by the General Appropriations Act in the first year of implementation.

In January 2014, the Philippines DOTC had awarded the contract for the PHP1.72 billion automatic fare collection system (AFCS) project to AF consortium, a joint venture (JV) led by Philippines-based companies Metro Pacific Investments Corporation (MPIC) and Ayala Corporation. The project involves upgrading the ticketing system for light-rail transit (LRT) and metro rail transit line 3 (MRT-3) to a contactless (tap-and-go) system in Manila.

(1 PHP [Philippine Peso] = 0.02 USD)

NZTA funds public transport projects in Auckland

The NZ Transport Agency (NZTA) has provided funding of USD1.6 million for two key public transport projects in Auckland. Funds worth USD780,000 is provided for the design of a bus station at the Manukau transport interchange and USD831,000 is provided for the design of the bus/rail interchange at Otahuhu. The funding represents a 50-per-cent share of the design cost for both projects, which are being developed by Auckland Transport.

EUROPE

STIF to invest EUR787 million in 2014

The public transport authority of Ile-de-France, Syndicat des Transports d'Ile-de-France (STIF), has approved an investment budget of EUR787 million for 2014, an 8.6 per cent increase over the investment budget for 2013. The projects include extension of the Paris metro Line 14 to Mairie de Saint-Ouen, including four new stations and a depot. The estimated investment of EUR450 million will be funded by Société du Grand Paris (59 per cent), the Ile-de-France region (19 per cent), the city of Paris (20 per cent) as well as the départements of Hauts-de-Seine and Seine Saint-Denis (1 per cent each).

The budget also includes funding for Phase II of the metro Line 4 extension to Bagneux. The estimated investment of EUR178 million will be funded by Ile-de-France (60 per cent), the central government (26 per cent) and Hauts-de-Seine (14 per cent). Additionally, STIF will provide EUR210,000 for preliminary studies on extending metro Line 10 from Gare d'Austerlitz to Ivry-sur-Seine. The studies are expected to require EUR300,000 and remainder 30 per cent will be provided by the national government. STIF will undertake public consultations on three route options to extend Line 1 from Château de Vincennes to Val-de-Fontenay, including location of potential stations. Of the light-rail projects planned for 2014, westward extension of Line T1 from Colombes to Nanterre and Rueil-Malmaison is under study.

(1 EUR [Euro] = 1.33 USD)

FirstGroup invests GBP4.5 million for 31 new buses for Bristol

UK-based transport operator FirstGroup has invested around GBP4.5 million for acquiring 31 new buses for the city of Bristol from Ballymena-based manufacturer, Wrightbus. Meanwhile, the operator has also introduced a new simplified fare structure in the city and a similar system is expected to be soon introduced in the area surrounding Bristol. The vehicles are already deployed on the routes Temple Meads-Clifton/Redland Circular and Horfield-Ashton Vale. All the new buses are low-floor Streetlite vehicles. Earlier, in January 2014, FirstGroup placed an order worth GBP70 million for 425 new buses to be deployed across UK. FirstGroup operates a fleet of 6,500 buses in 40 towns and cities of the UK, serving more than 2.3 million passengers per day.

(1 GBP [British Pound] = 1.64 USD)

Russian Railways to divest equity stake in Aeroexpress

On the instructions of the Russian Government, the Board of Directors of JSC Russian Railways has decided to reduce the company's equity position in Aeroexpress LLC from 50 per cent to 25 per cent by transferring 25 per cent of its stake to Delta-Trans-Invest at a transaction price based on the market value estimated by an independent appraiser.

Aeroexpress operates a rapid railway transit system conveying passengers between Moscow City and the airports of the Moscow Air Cluster (Vnukovo, Sheremetyevo, Domodedovo), between the Savyolovsky railway station and the Lobnya station, as well as in Kazan and Vladivostok cities (between the respective railway terminals and airports). The company's shareholding structure includes JSC Russian Railways, Delta-Trans-Invest LLC and private investors. It is an agent of the Russian Railways, selling tickets and providing services to passengers travelling between the rail terminal and the airport in Sochi city, and leasing out premises of the Sheremetyevo railway terminal.

Denmark to invest EUR10 billion in railways

The Government of Denmark has announced plans to invest EUR10.05 billion in improving train transport service in the country over the next 10 years. The investments will include a new signalling system, electrification and infrastructure to allow train speeds of 200 km/hr or more on main railway routes and 160 km/hr on many of the regional routes. ♦

NORTH AMERICA

California high-speed rail (HSR), USA

Developer: California High Speed Rail Authority (CHSRA)

Project description: Development of a 1,284-km (800-mile) high-speed railway line in California.

Background: The project involves construction of 1,284 km (800 miles) of railway line covering 24 stations in California to serve the major population centres from San Francisco and Sacramento in the north to Los Angeles (LA), Orange County and San Diego in the south. Table 1 provides details of the nine sections of the line.

Phase I of the project will connect San Francisco, the Central Valley, and LA/Anaheim. It will be implemented in three sections: the Initial Operating Section (IOS), the Bay-to-Basin section and Phase I blended section. Phase II will extend the network to Sacramento, San Diego, and Anaheim. Table 2 describes the sections under Phase I.

Funding: The project is estimated to require a total investment of USD68.4 billion. Of this, USD31.3 billion will be spent on constructing the IOS (including USD6 billion for early construction works), USD19.9 billion in constructing the Bay-to-Basin section and USD17.2 billion in constructing the Phase I blended section. About 80 per cent of the total cost is expected to be contributed by the public sector and 20 per cent by the private sector.

The state of California has passed the High-Speed Rail Safeguard Bill (Senate Bill 557) into law, which supports the “blended system approach” in which both Caltrain and HSR share two tracks on the San Francisco Peninsula. The bill grants veto power to nine Bay Area agencies (such as the Caltrain, Santa Clara Valley Transportation Authority and the Metropolitan Transportation Commission) over revisiting the four-track approach proposed by CHSRA, prohibits the transfer of funds from the San Francisco Peninsula segment of the project to other regions of the state and specifies that USD600 million in HSR funds be used to electrify Caltrain by 2019.

Table 1: HSR line sections

Section	Length (km)	Route	Planned stations	Expected date of completion
San Francisco -San Jose	80.46 (50 miles)	From San Francisco in the north to San Jose in the Silicon Valley via the San Mateo Peninsula.	San Francisco, Millbrae, San Jose and potential midline station in Redwood City, Palo Alto or Mountain View	2028
San Jose – Merced	201.17 (125 miles)	From San Jose’s Diridon train station through Gilroy and Pacheco Pass in the east to Merced in the north.	San Jose, Gilroy and Merced	2026
Merced – Fresno	96.56 (60 miles)	Parallel to Highway 99 through the northern stretch of the San Joaquin Valley.	Merced, Fresno and potential station to serve the Kings-Tulare County region	2021
Fresno - Bakersfield	183.46 (114 miles)	Traverses south through the centre of the southern portion of the San Joaquin Valley.	Fresno and Bakersfield	2017
Bakersfield - Palmdale	136.79 (85 miles)	Traverses southeast and runs parallel to Highway 58 and 14	Bakersfield and Palmdale	2021
Palmdale – LA	93.34 (58 miles)	Traverses southwest to Sylmar and then south to LA.	LA and Palmdale	2028
LA - Anaheim	46.67 (29 miles)	Traverses south to ARTIC via LOSSAN currently used by the BNSF railway, Metrolink and Amtrak trains.	LA, Anaheim and potential station in Norwalk/Santa Fe Springs or Fullerton.	Yet to be decided
Los Angeles - San Diego	268.76 (167 miles)	Traverses east from LA to the Inland Empire cities of Pomona and Ontario and further south along the I-215 or I-15 to San Diego.	LA (either in El Monte or West Covina or Pomona), Ontario (either in San Bernardino and Riverside or Corona), Murrieta, Escondido and San Diego	Yet to be decided
Sacramento - Merced	177.02 (110 miles)	Traverses east from Sacramento Amtrak station, parallel to Highway 99 from Elk Grove through the northern San Joaquin Valley to Merced.	Sacramento, Stockton, Modesto and Merced	Yet to be decided
Total	1,284.23 (800 miles)	-	-	-

Notes: LA – Los Angeles; ARTIC - Anaheim Regional Transportation Intermodal Center; LOSSAN - LA-San Diego Rail Corridor
Source: CHSRA

Table 2: Implementation sections under Phase I

Section name	Route	Service description	Estimated cost (USD billion)	Construction schedule
Initial operating section (IOS)	Merced to San Fernando	<ul style="list-style-type: none"> Construction of up to 209 km (130 miles) of HSR track and structures in the Central Valley near Merced Closing of the north-south intercity rail gap between Bakersfield and Palmdale by connecting the Central Valley to the LA Basin in San Fernando Valley Connection with enhanced regional/local rail lines for blended operations, with common ticketing 	31.3	2013-21
Bay-to-Basin section	San Jose and Merced to the San Fernando Valley	<ul style="list-style-type: none"> Shared use of electrified/upgraded Caltrain corridor between San Jose and the San Francisco Transbay Transit Center 	19.9	2021-26
Phase I blended section	San Francisco to LA/Anaheim	<ul style="list-style-type: none"> Dedicated HSR infrastructure between San Jose and Union Station in LA Shared use of electrified/upgraded Caltrain corridor between San Jose and the San Francisco Transbay Transit Center Upgraded Metrolink corridor from LA to Anaheim 	17.2	2014-28

Source: CHSRA

In September 2013, California commuter rail Caltrain commenced works on installing an enhanced signalling system under the Caltrain Modernization Program, which will upgrade electrification to prepare for future HSR operations. Stage I of the Communications Based Overlay Signal System (CBOSS) Positive Train Control (PTC) project involves installation of a fibre optic backbone along the Caltrain right-of-way for seamless communication between signals, trains, dispatchers and other components.

In August 2013, the design-build contract for the Madera-Fresno segment was awarded to the joint venture (JV) of Tutor Perini Corporation, Zachry Construction Corporation and Parsons Corporation.

In May 2013, Parsons Brinckerhoff (PB) secured a two-year extension contract worth USD96 million for programme management services. The CHSRA Board also agreed to carry forward USD24 million in unused funds from the original USD199-million contract with PB into the new term, taking the total value of the contract to USD120 million.

Recent developments:

- In February 2014, CHSRA awarded five contracts regarding right-of-way engineering and survey to California-based firms Chaudhary & Associates, Quad Knopf, O'Dell Engineering, Mark Thomas, and Hernandez, Kroone & Associates. Each contract is valued at about USD3.2 million.

Also in the same month, CHSRA received five qualified bids for the Fresno-Tulare-Kern County line. The contract is valued at USD1.5-2 billion. The bidders are California Rail Builders (comprising Ferrovial Agroman US Corporation and

Granite Construction Company); Dragados/Flatiron/Shimmick (comprising Dragados USA Incorporated, Flatiron West Incorporated, and Shimmick Construction Company); Golden State Rail Partnership (comprising OHL USA Incorporated, and Samsung E&C America Incorporated); JV of Skanska USA Civil West California District Incorporated and Ames Construction Incorporated, as well as a JV of Tutor Perini Corporation, Zachry Construction Corporation and Parsons Transportation Group.

- In January 2014, Amtrak and CHSRA issued a request for proposals for the supply of up to 43 train sets for use on the IOS and the existing Northeast Corridor (NEC) between Washington D.C. and Boston.

- In October 2013, CHSRA awarded the public-relations contract for the 177-km (110-mile) Merced-Bakersfield section to US-based Precision Civil Engineering.

Montreal metro, Montreal, Canada

Developer: Société de transport de Montréal (STM)

Project description: Expansion of the 71-km long metro system serving the city of Montreal in Canada.

Background: The metro system spanning 71 km is currently the longest metro system in Canada. It comprises four operational lines covering 68 stations. In April 2013, STM unveiled its second Sustainable Development Plan, which outlines significant investments for bus and metro infrastructure and rolling stock to increase ridership by 40 per cent to 540 million trips by 2020. The actions planned for the metro include:

- Blue line (Line 5) extension: The existing 9.7-km long line will be extended in two phases – from Saint-Michel up to Pie-IX Boulevard under Phase I and past Pie-IX to the boroughs of St. Leonard and Anjou under Phase II, with the addition of five stations.
- Orange Line (Line 2) extension: The existing 30-km long line will be extended northwest from the Côte-Vertu station up to the Bois-Franc commuter rail station in St. Laurent with the addition of two stations.
- Integration of measures favouring inter-modality between biking and public transit into bus terminals and metro extension projects.
- Maintenance and enhancement of the metro system's architectural and cultural assets.
- Increase in passenger capacity by replacing MR-63 and MR-73 cars with larger-capacity Azur cars, the addition of 126 cars and the extension of the metro rail system.

Rolling stock: The system's current rolling stock comprises 759 cars (336 MR-63s and 423 MR-73s). In November 2013, a consortium of Bombardier Transportation and Alstom Transport unveiled the first nine-car metro train as part of the order for 468 cars to be delivered between 2014 and 2018.

Fare collection: The system is equipped with contactless ticketing facilities, featuring the contactless smart card called OPUS.

Recent developments:

- In February 2014, tenders were invited to supply tyres for metro cars.
- In January 2014, tenders were invited to provide geo-technical and environmental services for the Blue Line.
- In December 2013, tenders were invited to provide project management services (PMS) for the metro extension.
- In September 2013, STM invited requests for proposal to supply braking spare parts for metro cars.

LATIN AMERICA

Metropolitano Alto Tietê bus rapid transit (BRT) system, São Paulo, Brazil

Developer: Empresa Metropolitana de Transportes Urbanos de São Paulo (EMTU)

Project description: Development of a 20.9-km long BRT system by 2016 in São Paulo city.

Background: The BRT will connect the municipalities of Arujá, Itaquaquetuba, Poá and Ferraz de Vasconcelos in the city of São Paulo. It will cover 26 bus stops and be divided into three stretches:

Route 1: It will extend 3.2 km in Arujá and feature four stops, one transfer station and one terminal.

Route 2: It will extend 10.3 km along state highway SP-56 in Itaquaquetuba, covering 14 stops and one transfer station.

Route 3: It will extend 7.4 km from Poá to Ferraz de Vasconcelos, covering eight bus stops and two terminals.

Rolling stock: A fleet of 67 vehicles will be deployed, including 55 articulated buses and 12 conventional buses, operating at an average speed of 25 km/hr.

Works on the project are expected to begin in early 2015 and be completed by mid-2016. The estimated investment for the project is BRL337 million and it will be funded by the state government. Once operational, the system is expected to serve about 47,000 passengers daily.

Recent developments:

- In February 2014, the consortium Projeto BRT Arujá, comprising Brazil-based companies Vetec Engenharia and Walm Engenharia e Tecnologia Ambiental secured the contract to construct the BRT system.

(1 BRL [Brazilian Real] = 0.50 USD)

Tren Urban de Lima (Lima Metro), Peru

Developer: Autonomous Electric Train Authority (AATE). In April 2011, ProInversion, state agency for the promotion of private investment, awarded a 30-year concession for the operation and maintenance of Line 1 to the Tren Eléctrico Lima consortium comprising of Peru-based Graña y Montero SA, Brazil-based Norberto Odebrecht SA and Argentina-based rail operator Ferrovias S. The system is owned by AATE.

Project description: Expansion of the 21.4-km-long electric mass-transit system serving Lima.

Background: The metro network consists of one operational line – Line 1, which spans 21.4 km from Villa El Salvador to Hospital Dos de Mayo in Avenida Grau covering 16 stations. Operations commenced in April 2012.

The following new lines and extensions are underway:

Line 1 (Second section): The 12.4-km-long extension to San Juan de Lurigancho covering 10 stations is planned to be developed at an investment of USD610 million.

In January 2013, the Government of Peru announced investment of USD459 million for the line. This amount is part of a total investment of USD2.05 billion that Peru's transport and communications ministry (MTC) allocated for transport infrastructure in 2013.

Line 2: The 35-km underground line from Ate district in the east to Callao in the west will cover 35 stations by 2016. The consultancy contract worth USD5.6 million was awarded to a consortium led by Italy-based Geodata Engineering in June 2012.

The expected daily ridership of the line is 644,000 passengers and 24,000 passengers per hour at peak times.

Line 4 – It will comprise an 8-km extension from Callao port to the Jorge Chavez international airport.

In December 2010, Peru-based consulting firm CESEL Ingenieros prepared the Mass Electric Transport System of Lima and Callao which proposes five metro lines for the capital city. These are:

Line 1 (Green): The line will connect the following districts " Avenida Separadora Industrial, Avenida Pachacutec, Avenida Tomás Marsano, Avenida Aviación, Avenida Grau, Jirón

Locumba, Avenida 9 de Octubre, Avenida Próceres de la Independencia and Avenida Fernando Wiese.

Line 2 (Yellow): The line will connect the following districts “ Avenida Guardia Chalaca, Avenida Venezuela, Avenida Arica, Avenida Guzman Blanco, Avenida 28 de Julio, Avenida Nicolás Ayllón and Avenida Víctor Raúl Haya de la Torre (Carretera Central).

In August 2013, the Ministry of Economy and Finance (MEF) and the MTC declared Line 2 feasible. However, the estimated cost of the line was increased from USD5.37 billion to USD6.5 billion.

Line 3 (Blue): The line will connect the following districts “ Avenida Alfredo Benavides, Avenida Larco, Avenida Arequipa, Avenida Garcilazo de la Vega, Avenida Tacna, Avenida Pizarro, Avenida Túpac Amaru, Avenida Rosa de América and Avenida Universitaria.

Line 4 (Red): The line will connect the following districts “ Avenida Elmer Faucett, Avenida La Marina, Avenida Sánchez Carrión, Avenida Salaverry, Avenida Canevaro, Avenida José Pardo de Zela, Avenida Canadá, Avenida Circunvalación and Avenida Javier Prado.

Line 5 (Pink): The line will connect the following districts “ Avenida Huaylas, Avenida Paseo de la República, Avenida República de Panamá and Avenida Miguel Grau.

Rolling stock and technology: The system operates a fleet of 32 cars, configured as five six-car trains plus two spare cars, purchased in the 1980's.

Each car has a capacity of 200 passengers. France-based Alstom SA has supplied 19 Metropolis train-sets (five coaches each) as per a contract worth EUR130 million secured in April 2011.

Tracks are standard gauge (1,435 mm). Power is sourced from overhead catenary (1.5 kV DC).

Fare system: The metro uses an automatic fare collection system provided by Germany-based Siemens.

Recent developments:

- In February 2014, ProInversión, postponed the bid deadlines for Line 2. The deadline for submitting the technical and economic bids was delayed from February 21, 2014 to March 21, 2014, and the tender for the 35-year concession was delayed from end-February 2014 to March 28, 2014.

The prequalified bidders include: Consorcio Nuevo Metro de Lima comprising Spain-based ACS Group and Fomento De Construcciones Y Contratas SA (FCC), Italy-based Impregilo S.p.A and AnsaldoBreda, and Peru-based Cosapi y JJC Contratistas; Consorcio Metro Subterráneo de Lima comprising Italy-based Astaldi, and Mexico-based Controladora de Operaciones de Infraestructura; and Consorcio Metro de Lima Linea 2 comprising Brazil-based Odebrecht, Constructora Andrade Gutierrez, Queiroz Galvão Constructora, and Peru-based Graña y Montero.

- In January 2014, the second section of Line 1 will begin operations by June 2014, four months ahead of schedule.

(1 EUR [Euro] = 1.24 USD)

ASIA PACIFIC

Mumbai Monorail, India

Developer: Mumbai Metropolitan Region Development Authority (MMRDA)

Project description: Development of a 19.54-km monorail line to serve Mumbai.

Background: The monorail line will serve Mumbai, the capital city of Maharashtra in India. It will be the first monorail in the country and the world's second largest monorail corridor.

The system will connect with the existing suburban railway and the upcoming metrorail. Ridership is expected to be 130,000 per day by 2016, and 300,000 per day by 2031.

The 19.54-km pilot corridor (Phase I) will cover 18 stations from Chembur to Jacob Circle. It will consist of two elevated sections – the 8.26-km Section I from Wadala to Chembur covering seven stations, and the 11.28-km Section II from Jacob Circle to Wadala covering 11 stations. All stations will be 11.5 metres above ground level.

The contractors and consultants involved in the development of the project are provided in Table 1.

Table 1: Contractors and consultants involved in the development of the project

Company	Scope of work
RITES Limited	Prepared the master plan and the detailed project report (DPR) for the pilot corridor.
A consortium of Larsen & Toubro (L&T) and Scomi Engineering Berhad	Responsible for engineering, procurement and construction (EPC) works
Louis Berger Group	Project management and proof-checking consultant
Ansaldo STS	Responsible for design, supply and commission of the train control and signalling system for the two sections
Consort Digital Private Limited (the Indian partner of Sepura Limited)	Responsible for system integration
SMRT Corporation	Independent assessor for testing and commissioning
Indra Sistemas	Provided automated fare collection system using contactless smart cards and tokens

Source: Compiled by Global Mass Transit Research

Rolling stock: Scomi will provide a fleet of 15 four-car train-sets, each valued at INR110 million and having a capacity of up to 568 passengers.

Initially, Section I will deploy nine trains and Section II will deploy six trains. The journey time on Section I will be 25 minutes and that on Section II will be 19 minutes. The trains

will have an average speed of 65 km/hr and a maximum speed of 80 km/hr.

Fare collection: In June 2013, MMRDA revealed plans to procure a common smart card for metrorail, monorail, buses, and potentially the suburban rail. The fare for the monorail will be between INR8 and INR20 per km.

Recent developments:

- In February 2014, passenger services began on Phase I section from Wadala to Chembur. L&T and Scmi completed the construction in five years at a cost INR30 billion.

(1 INR [Indian Rupee] = 0.02 USD)

Beijing – Zhangjiakou high-speed rail (HSR)

Developer: Government of China and the governments of Hebei Province, Zhangjiakou city, and the Beijing Municipality.

Project description: Development of a 174-kmlong railway line from Beijing North (Xizhimen) to the Zhangjiakou South railway station.

Background: The railway line will extend from Beijing North (Xizhimen) to the Zhangjiakou South railway station, covering 10 stations.

It is expected to bring down journey time between the two cities from five hours to 40 minutes and will provide an advantage in the joint bid that the two cities will launch to host the 2022 Winter Olympic Games.

The investment for the project is estimated to be CNY23 to CNY30 billion. According to the project plan, the Beijing-Zhangjiakou line will link with the Zhangjiakou-Jining Railway and the Jining-Baotou Railway in the west, and Beijing in the east, serving as an important part of the inter-city railway network between Beijing, Tianjin and Hebei Province. This plan may be further revised.

The line will run on the Beijing North-Tsinghua University Park (Qinghuayuan)-Qinghe-Shahe-Changping West-Badaling West-Shacheng-Xiahuayuan North-Xuanhua North-Zhangjiakou South route.

Of the total length, 70.4 km will be in Beijing and 103.6 km will be in Hebei Province. The line will mainly traverse plains and low mountainous areas. Several tunnels will be constructed, including the 15-km long Badaling tunnel.

Rolling stock and technology: The rolling stock will require an investment of CNY2.4 billion. In January 2011, the Beijing Municipal Commission of Housing and Urban-Rural Development announced that the design speed of the trains will be 300 km/hr.

Tracks will be standard gauge (1,435 mm) and ballastless. The line will feature double tracks. Power will be sourced from a 25 kV AC system. Automatic block system will be deployed for signalling.

Recent developments:

- In February 2014, it was announced that construction on the HSR line is expected to begin by mid-2014 and be completed by 2017.

(1 CNY [Chinese Yuan] = 0.16 USD)

EUROPE

Oslo T-bane, Norway

Developer: Ruter AS

Project description: Expansion of the 84.2-km long metro system in Oslo city.

Background: The Oslo metro, known as the Tunnelbana or T-bane, serves 14 out of the 15 boroughs of Oslo (all except St. Hanshaugen) as well as the neighbouring municipality of Bærum. It is one of the largest metro systems in Europe and commenced operations in 1898. The current network comprises six lines, which together span 84.2 km covering 90 stations (15 underground).

The following extensions on existing lines, new lines, line upgrades and station projects are planned to be undertaken under the Oslo Package 3 for the period 2008-2032, at an investment of NOK90 billion.

Kolsås Line (west end of Line 6) – Upgradation for shared operation of metro trains and trams; involves replacement of the overhead wire by third rail, extension of station platforms to accommodate six-car trains, signalling modifications, ATC and new rolling stock

Common Tunnel – Upgradation of the common tunnel from Nationaltheatret to Majorstuen (including signalling upgrades)

Loren Railway - New link connecting Hasle station on Line 5 with the Økern station on the Ring Line, to relieve traffic from the common tunnel, and which includes the construction of a new underground station at Loren

Furuset Line extension - Line from Ellingsrudåsen to Tveita via Furuset, Lindeberg, Trosterud and Haugerud to be extended up to Lørenskog (5 km) to connect the new Akershus University Hospital

Furuset Line extension (Phase 2) – A 3.8-km long extension of the Furuset Line to Lillestrøm

Furuset Line extension (Phase 3) – A 4.8-km long link from Ellingsrudåsen to Stovner

New metro tunnel – New tunnel from Majorstuen to Tøyen via Stortinget to relieve traffic on the existing common tunnel

Avløs depot – Construction of a new maintenance depot at Avløs, comprising four new buildings for staging, interior cleaning, servicing and maintenance of subway cars

Majorstuen station – Construction of a new station at Majorstuen

Homansbyen station – Construction of a new station at Homansbyen between Nationaltheatret and Majorstuen to replace the existing tram station

Ridership: The Oslo metro carried 82 million passengers in 2013. This translates to an average daily ridership of around 22,500 passengers.

Rolling stock and technology: The system deploys 115 model MX3000 three-car trains, the world's biggest uniform metro fleet provided by Germany-based Siemens. T-bane has entirely replaced its earlier rolling stock of T1000 trains with the Siemens fleet.

Tracks are standard gauge (1,435 mm). Power is sourced from the third rail (750 V DC).

Fare collection: A multi-modal fully-contactless smart card fare collection system supplied by Thales is deployed. It accepts period passes and T-Purse (Mifare DESFire) and limited-use tickets for single journeys and day passes (Mifare Ultralight). The system also uses mobile ticketing.

Recent developments:

- In February 2014, Ruter received delivery of the final MX3000 metro trains from Siemens, taking the total number of MX3000s in its fleet to 115.

- In January 2014, Norway-based mobile operator Telenor provided access to high-speed mobile internet service between Risløkka and Vestli on metro Line 5.

- In December 2013, Germany-based Siemens Rail Automation secured a contract to supply signalling and train control equipment for the new metro depot at Avlås.

- In November 2013, it was announced that investments of about NOK2.28 billion are required to upgrade the metro signalling system. A semi-automatic system would be deployed such that the trains are operated from a central computer.

- In September 2013, Ruter announced the success of its ticket app, with over 350,000 downloads since the launch before Christmas in 2012 and over three million tickets sold.

(1 Norwegian Krone [NOK] = 0.15964 USD)

Ankara rapid transit, Turkey

Developer: Electricity, Gas, Bus General Directorate (EGO)

Project description: Expansion of the rapid transit system in Ankara, Turkey.

Background: The system currently comprises two metro lines and a light-rail line. These are:

M1: The 14.7-km line (7.1 km underground, 4.1 km at-grade and 3.4 km elevated) extends from Kızılay Square in the city centre to Batıkent in the northwest suburbs, covering 12 stations (5 underground, 5 at-grade and 2 elevated).

M3: The 15.4-km line extends from the Batıkent terminus on Line M1 to OSB Törekent in Sincan covering 10 intermediate stations.

A1: The 8.5-km light-rail line, also known as Ankaray, runs east-west from the A'ti bus terminal to the Dikimevi, covering 11 stations. It has interchange with the metro at Kizilay and with the suburban railway at Kurtulus. It was built by a Germany-based Siemens-led consortium which included Italy-based Adtranz and Breda.

Construction on the following three lines is currently underway:

M2: The 16.6-km line will extend from Kizilay in the city centre to the southwestern suburb of Çayyolu.

M4: The 10-km line will extend north from Tandoğan to Keçiören through Ulus. Construction contract was awarded to the Gülermak-Kolin consortium in February 2012.

M5: The line will run from City centre to Ankara Esenboga Airport.

Rolling stock: In July 2012, China-based train manufacturer China South Locomotive and Rolling Stock Corporation Limited's (CSR) wholly owned subsidiary Zhuzhou Electric Locomotive Company Limited secured a CNYB2.5-billion contract to supply 15 metro trains within 20 months of the signing of the contract and the remaining trains within 39 months.

Track is standard gauge (1,435 mm). Power is sourced from third rail (750 V DC). UK-based Coppee Engineering and Westinghouse Brakes have provided the tracks, power system, braking, air-conditioning equipment and ticket machines under a contract signed in 1993.

Recent developments:

- In February 2014, passenger services commenced on M3. A consortium of Spain-based civil engineering group Comsa-EMTE and Turkey-based Açılım İnfaat has constructed the line at a cost of TRY216 million. Also in the same month, EGO invited tenders to deliver wheel sets for the Ankara metro.

(1 Chinese Yuan Renminbi [CNY] = 0.16 USD; 1 Turkish Lira [TRY] = 0.45 USD)

MIDDLE EAST & AFRICA

Jerusalem light rail transit (LRT), Israel

Developer: CityPass Limited — a consortium of Ashtrom Properties Limited (27.5 per cent), Harel Insurance Investments & Financial Services Limited (30 per cent), Polar Investments Limited (17.5 per cent), Israel Infrastructure Fund (20 per cent), and Veolia Transport SA (5 per cent).

In June 2013, France-based Alstom SA sold its 20 per cent stake in the LRT franchisee CityPass Limited to Israel Infrastructure Fund and Harel Insurance Investments & Financial Services Limited for NIS30 million.

Project description: Expansion of the Jerusalem LRT by 21.9 km.

Background: The LRT serves Jerusalem, the capital and largest city of Israel, since 2011. It comprises the Red Line which extends 13.8-km from Mount Herzl to Pisgat Ze'ev, covering 23 stations.

The stations are evenly spaced at 500-700 metres apart, depending on the population density. Amongst them, seven are close to Arab districts.

In June 2013, the Jerusalem Regional Planning Committee approved the allocation of NIS1.1 billion from the Transportation Ministry's budget for the LRT extension.

The line will extend 21.9 km from Mount Herzl to Hadassah Ein Kerem Medical Centre at an estimated investment of about NIS4 billion by 2015. Preparatory work commenced in June 2013.

Rolling stock and technology: The current fleet comprises 46 Alstom Citadis 302 trams. Each tram has 56 fixed and eight folding seats. The trams feature bulletproof window panes. Additional trams will be purchased for the extension.

The double track is standard gauge (1,435 mm) and power is sourced from overhead catenary systems at 750 V DC.

Ridership and fare collection system: Ridership on the existing system is 130,000 passengers each day. Contactless smart cards called the Rabbi card are provided by US-based ACS under a 15-year contract from Alstom.

Recent developments:

- In February 2014, the Interior Ministry's District Building Committee approved a 1.5-km extension from the intersection of Herzl Boulevard and Rabbi Zvi Yehuda Street, along Kanfei Nesharim Street, to the entrance of Har Nof, covering four stops.

(1 NIS [New Israeli Shekel] = 0.27 USD)

Doha metro rail project, Qatar Railways Development Company, Qatar

Developer: Qatar Railways Development Company (QRDC), a joint venture (JV) of Germany-based rail operator Deutsche Bahn (DB) International (49 per cent stake) and QRail (51 per cent stake). QRail is a fully-owned subsidiary of the Qatari Diar Real Estate Investment Company (QDREIC).

Project description: Development of a 212-km long metro system in Doha by 2026.

Background: The project will serve Doha, the capital city of Qatar, which is the host for the FIFA World Cup Games in 2022.

The planned network comprises four lines (Red, Green, Gold and Blue) spanning 212 km (89 km underground, 81 km elevated) covering 89 stations.

The Red line will start from Mesaieed, cross Al Wakra, the New Doha international airport, downtown Doha and Lusail, and reach Al Khor and Al Shamal.

The Green and Gold lines will link the eastern and western parts of the city. The Blue line is designed to run along the C-Ring Road.

The network will be developed in two phases. DB International and QDREIC have developed the conceptual design.

UK-based Turner & Townsend are the project management consultants. US-based Parsons Brinckerhoff is the strategic project manager. US-based CH2M Hill is the programme manager.

Phase I involves development of a 135-km-long section (53 km underground and 48 km elevated) covering 47 stations at an investment of USD41 billion.

The construction will be delivered through 15 contracts and is expected to be complete by 2020 in preparation for the FIFA Games.

Civil works will be taken up during March 2014-January 2019; track work during January 2016-December 2018; station works during June 2018-September 2020 and testing during October 2019-December 2020.

Meanwhile, Phase II is planned to be completed by 2026. Civil works will be taken up during September 2014-November 2023; track work during January 2017-November 2021 and testing during February 2025-April 2026.

Rolling stock: The initial fleet will comprise 100 three-car train sets with driverless technology. The trains will run at maximum speed of 80 km/hr in urban areas and 130 km/hr in suburban areas.

Tracks will be standard gauge (1,435 mm). Power will be sourced from the third rail (750 V DC).

Ridership: Ridership is expected to be 60,000 passengers per direction per day with the Red Line carrying 24,000 passengers, and the Blue, Green and Gold lines carrying 12,000 passengers each.

In May 2013, Qrail awarded design and construction contracts worth QAR20 billion. These are:

- The Red Line South underground section construction contract, worth QAR8 billion, was awarded to the consortium of South Korea-based GS Engineering and Construction Corporation, Qatar-based Darwish Engineering and the Qatar/France-based engineering company QDVC (a joint venture of Qatari Dar Real Estate Investment Company and French Vinci Construction Grands Projects).
- The Green Line underground section construction contract, worth QAR8 billion, was awarded to Saudi Arabia-based Saudi Binladin Group, Austria-based PORR and Qatar-based HBK Contracting Company.
- The construction contract for two major stations (Msheireb and Education City), worth QAR4 billion, was awarded to South Korea-based Samsung C&T, Spain-based OHL and Qatar Building Company.

In April 2013, a consortium comprising Italy-based Impregilo, South Korea-based SK Engineering & Construction and Oman-based Galfar Engineering & Contracting was selected for the Red Line North package (construction of the underground northern section of the proposed Red Line).

Recent developments:

- In February 2014, QRail issued conditional letters of award (LoA) to the two contracting groups competing for the USD3.3-billion construction contract for the Gold Line. The letters will give the contractors a final chance to submit their commercial offers ahead of an expected award in March 2014.

The two groups competing for the contract are the consortium of Greece-based Aktor, Turkey-based Yapi Merkezi, Turkey-based STFA, India-based Larsen & Toubro and Qatar-based Aljaber Engineering, as well as the consortium of Germany-based Hochtief, Qatar-based Al-Jaber Trading, Athens-based Consolidated Contractors Company (CCC), Qatar-based Marbu Contracting Company and Qatar-based Lusail Hochtief.

- In September 2013, the Qatar Foundation for Education, Science & Community Development, developer of the Doha Tram, revealed plans to link the tramway network with the upcoming Doha metro system.

The EUR100-million tram project is expected to commence operations in September 2015 as part of Qatar's preparation for 2022 FIFA World Cup.

(1 QAR [Qatari Riyal] = 0.27 USD)◆

NORTH AMERICA

NewFlyer secures contract to supply 276 buses to NYCT

US-based New Flyer Industries Incorporated (New Flyer) has secured the USD138-million contract from New York City Transit (NYCT) Authority to supply 276 heavy-duty 40-foot Xcelior (R) clean diesel-powered buses.

Production of the buses is expected to begin in the third quarter of 2014, with the delivery of four pilot buses, and be completed by the fourth quarter of 2015.

NYCT and MTA Bus Company, collectively known as MTA, forms the largest transit agency in North America with over 5,700 buses, of which about 1,000 are supplied by New Flyer.

Over the last three years, New Flyer has delivered 668 transit buses to MTA with both clean diesel and natural gas propulsion systems in 40- and 60-foot configurations.

CHSRA awards engineering and survey work contracts to five firms

The California High-Speed Rail Authority (CHSRA) has awarded five contracts regarding right-of-way engineering and survey to California based firms Chaudhary & Associates, Quad Knopf, O'Dell Engineering, Mark Thomas, and Hernandez, Kroone & Associates. Each contract is valued at about USD3.2 million.

Under the terms of the contracts, the five firms will locate offices in Fresno, Tulare or Kings County, and will adhere to the authority's 30 per cent small business participation goal.

The scope of work includes staking and marking of parcels, drafting of maps, development of legal property descriptions, identification and relocation of underground utilities, administration and project management, drafting of progress reports and deployment of project tracking systems. It will include support services for acquiring more than 1,000 parcels of real property from just south of Madera to north of Bakersfield.

Stagecoach expands megabus.com service

The Stagecoach Group has expanded services under its megabus.com brand, which offers low-cost inter-city bus services to Columbia in South Carolina and Fayetteville in North Carolina. Fares for the bus service will begin from USD1. With this initiative, Stagecoach will cover 34 states in the US and serve more than 10 million passengers per year.

In future, additional services will begin to and from Atlanta and Athens in Georgia and Durham in North Carolina.

Verizon deploys wireless in 35 NYC subway stations

US-based Verizon has deployed wireless service comprising voice, 3G and 4G LTE data services in 35 New York City (NYC) subway stations.

The stations cover the west side of Manhattan from 23rd Street to 96th Street, including Times Square, Rockefeller Center, Lincoln Center and Columbus Circle. With this service,

Verizon customers can make and receive calls and text messages, dial emergency numbers, and access the internet in subway stations.

The contract to deploy this service was signed between Verizon and Transit Wireless in August 2013. Transit Wireless owns and operates the subway station wireless communications network and acts as a neutral host for extending a variety of services to passengers.

In future, this service will be extended to 40 additional stations including Grand Central in Manhattan and all underground stations in Queens.

Masabi to deploy mobile ticketing for bus services in Nassau County

The Nassau Inter-County Express (NICE) has announced plans to launch a mobile ticketing pilot for bus services in partnership with UK-based Masabi.

The product will include ticket purchase, user display and validation, back-end infrastructure for secure payments, ticket management, customer service and real-time analytics. Testing is expected to begin in March 2014 and the full roll-out is scheduled for June 2014.

Ticket applications will be available for iOS and Android phones. NICE riders will buy their mobile tickets on their phone and activate them as they board the bus. The tickets will be displayed on the Smartphone and shown to the bus operator. They will also contain a barcode, which can be scanned for validation.

In future, NICE may install a different technology such as proximity readers or barcode generators for riders to scan and pay.

NICE is a public-private partnership between Nassau County and Veolia Transportation. It provides bus and para-transit services on 52 routes with a fleet of 300 fixed-route buses and 95 para-transit vehicles. NICE serves about 100,000 passengers daily.

LATIN AMERICA

Indra Sistemas wins new ticketing contracts in Brazil and Chile

Spain-based information technology solutions provider Indra Sistemas SA, has secured ticketing contracts for the Sao Paulo metro in Brazil and the Santiago metro in Chile.

The Sao Paulo contract, valued at EUR1.4 million, involves implementation of the the access control and ticket validation systems for the 11 stations on Line 5 extension. The ticketing system will simultaneously process and manage magnetic tickets, contactless cards, and metropolitan area cards, to facilitate transfers between the subway and buses.

The Santiago contract, worth EUR3.9 million, involves provision of support services to the metro for the next five years, including maintenance of Transantiago's integrated payment platform as well as support/ maintenance for subway's electronic access system (deployed by Indra).

(1 EUR [Euro] = 1.33 USD)

ABB secures power supply contract for Salvador metro

Switzerland-based power and automation technology firm ABB has secured the order from Brazil-based highway and metro concessionaire, CCR Group, to provide power substations for Salvador metro expansion in Brazil.

ABB will construct two primary substations, 17 distribution substations, seven traction substations and a 32-km-long medium-voltage ring.

The company's compact plug-and-switch system (PASS) hybrid switchgear will be deployed to position the substations close to the rail stations.

The works are expected to be completed by 2016.

The planned metro expansion includes extension of Line 1 by 17.6 km and construction of Line 2, which will extend 24.2 km between Lauro de Freitas and Bonocô Avenues.

ASIA PACIFIC

Ansaldo to deliver systems for Navi Mumbai metro

The City and Industrial Development Corporation of Maharashtra (CIDCO) has selected Italy-based Ansaldo STS (Ansaldo) to carry out systems work for the Navi Mumbai metrorail project.

The contract includes laying of tracks as well as provision of signalling and telecommunication system. Ansaldo, which emerged as the lowest bidder, had quoted INR13.30 billion for the project.

The contract is expected to be awarded by end-February.

The metrorail is expected to be developed at an investment of about INR20 billion by 2016.

(1 INR [Indian Rupee] = 0.015 USD)

CEC to start construction of Taipei airport link in early 2014

The Taiwan Bureau of High Speed Rail (BHSR) has announced that China-based Continental Engineering Corporation (CEC) will start construction on the south-west extension of the airport rail link between Taiwan Taoyuan International Airport (TTIA) and Zhongli station in Taipei in February 2014. At present, testing is underway on the 51-km-long Taipei Railway Station-TTIA section.

Bidding for electrical engineering of the project is expected to begin by mid-2014. Despite the year-long delay, the line is expected to become operational as originally targeted in June 2018.

BTS and CITIC to bid together for the Beijing Subway Line 16

Thailand-based BTS Group Holdings Public Company Limited (BTS Group), the operator of SkyTrain in Bangkok, and CITIC Construction Company Limited (CITIC), a wholly-owned subsidiary of CITIC Group Corporation, have jointly formed a consortium, BTS-CITIC, to bid for operating Beijing Subway Line 16 for a 30-year period.

The 50-km-long Beijing Subway Line 16 is a new line planned in western Beijing from Beianhe to Wanping covering 29 stations. It is to be developed as a public-private partnership (PPP) by 2018 at an investment of approximately USD2.46 billion.

AF consortium partners with MSI to launch AFCS project in Manila

Philippines-based AF consortium, a joint venture (JV) of Metro Pacific Investments Corporation (MPIC) and Ayala Corporation, has partnered with Singapore-based MSI Global Private Limited (MSI) to rollout a contactless (tap-and-go) system on the light-rail transit (LRT) and metro rail transit 3 (MRT-3) in Manila at an investment of USD40 million. Each partner will contribute an equal share of the investment cost for the project, which is expected to be completed in 18 months.

In January 2014, the consortium had secured the PHP1.72-billion automatic fare collection system (AFCS) contract to upgrade facilities at 44 stations as well as 328 turnstiles on LRT Line 1, 229 turnstiles on LRT Line 2, and 171 turnstiles on MRT Line 3.

(1 PHP [Philippine Peso] = 0.02 USD)

NESPAK to design BRTS in Karachi

The Karachi Mass Transit Cell (KMTC) has appointed National Engineering Services Pakistan Private Limited (NESPAK) to conduct a feasibility study for the planned bus rapid transit system (BRTS) Yellow Line Karachi Project.

The report will cover technical, financial, economic, legal and environmental aspects along with transaction advisory services.

NESPAK has prepared the preliminary design, engineering and environmental impact assessment reports for the project. The BRTS will extend 26 km from Dawood Chowrangi to Regal Chowk and Numaish Chowrangi via 8000 Road in Korangi Industrial Area, Korangi Road, Shahrah-e-Faisal, Shahrah-e-Quaideen and New M. A. Jinnah Road/Preedy Street. The corridor was identified under the Japan International Co-operation Agency (JICA) Transport Master Plan 2030.

The expected investment for the project is PKR13 billion and it will be executed as a public-private partnership (PPP) with three main concession contractors covering infrastructure development, intelligent transportation system (ITS), and fare collection and bus operations. In future, it may be converted into a light rail transit (LRT) system.

(1 PKR [Pakistan rupee] = 0.0119 USD)

RITES to prepare DPR for Namma metro Phase III

The Bangalore Metro Rail Corporation Limited (BMRCL) has awarded a contract to India-based Rail India Technical and Economic Service (RITES) Limited to prepare a detailed project report (DPR) for Phase III of the Namma metro project in Bangalore.

RITES will undertake a detailed geotechnical investigation along the 33-km section from Central Silk Board to Hebbal.

Phase III will span 133 km, connecting Koramangala, Sarjapur and Hindustan Aeronautics Limited (HAL).

Volvo and Tata Motors to supply buses in Kolkata

The state government of West Bengal has awarded a contract to supply 63 low-floor, air-conditioned (AC) buses to Sweden-based Volvo AB (Volvo) and a contract to supply 120 semi-low floor buses to India-based Tata Motors for the city of Kolkata. These will be the first tranche of over 600 buses to be procured for the Calcutta State Transport Corporation (CSTC), under the Jawaharlal Nehru National Urban Renewal Mission (JnNURM) scheme. The AC buses will be manufactured at Volvo's Bangalore facility.

China Mobile launches NFC mobile application for Shanghai metro

China Mobile Limited has launched a mobile application that will allow passengers using near-field communication (NFC)-enabled mobile phones to pay metro fares and make retail transactions at 20,000 stores in Shanghai. Retail purchases made via the application will be limited to CNY1,000 per day.

A 10 per cent discount is also applicable for the metro services once payments using the new service reach CNY70 in the month.

(1 CNY [Chinese Yuan Renminbi] = 0.16 USD)

Arup-led consortium secures contract for Canberra LRT

The Australian Capital Territory (ACT) government has awarded a design, construction, operation and maintenance (O&M) contract to a consortium of nine firms led by UK-based design and engineering firm Arup for the Capital Metro light-rail transit (LRT) system in Canberra.

The other firms in the consortium are US-based Parsons Brinckerhoff, UK-based SLR Consulting, and Australia-based Hassell, Brown Consulting, LANDdata Surveys, Philip Chun Access, Godden Mackay Logan (GML) Heritage and DSB Landscape Architects.

The Capital Metro project is a part of the ACT government's infrastructure programme. Stage I of the LRT is planned from the city centre Civic to Northbourne Avenue and further towards Gungahlin along the Flemington Road. Construction is expected to begin in 2016.

Toshiba to supply turnkey systems to Taiwan HSR

The Taiwan High Speed Rail Corporation (THSRC) has awarded a turnkey contract worth JPY2.8 billion to Japan-based Toshiba Corporation for the supply of electrical and mechanical systems (E&M) for three new stations of the Taiwan high-speed transit (HSR) (Miaoli, Changhua and Yunlin) which are due to open in end-2015.

The contract includes passenger information systems, signalling systems, electrification and power systems, as well as the maintenance management information system.

(1 JPY [Japanese Yen] = 0.011 USD)

CSR Sifang to supply suburban rail EMUs in Wenzhou

China-based CSR Sifang Company Limited (CSR Sifang) has secured a contract to supply 32 four-car electric multiple units (EMUs) for the upcoming Line S1 of the suburban rail in Wenzhou. The 52-km east-west line will link the city centre with Oujiangkou New District. Phase I of the line is scheduled to open in March 2017.

The first EMU is scheduled to be delivered for testing in November 2014. The EMUs will have two motor and two trailer cars; power requirement of 25 kV AC; and ability to reach maximum speed of 140 km/hr.

CSR Sifang is a wholly-owned subsidiary of China South Locomotive and Rolling Stock Industry Corporation (CSR).

CNR supplies first driverless metro train to Hong Kong MTR

Hong Kong metro operator MTR Corporation Limited (MTR) has received the first of ten three-car driverless metro trains from China-based CNR Changchun Railway Vehicles Company Limited (CNR) for deployment on the 7-km long South Island Line (East).

The train will now be tested at the Siu Ho Wan depot and then be moved to Wong Chuk Hang depot by end-2014 for final testing before entering passenger service in 2015.

The South Island Line (East) will run from Admiralty to South Horizons covering three intermediate stations at Ocean Park, Wong Chuk Hang and Lei Tung. About 60 per cent of the works have been completed on the line.

Philippines DOTC awards consulting contract for LRT-2 extension in Manila

The Philippines Department of Transportation and Communications (DOTC) has awarded a civil works consultancy contract worth PHP240.78 million for the Light Rail Transit Line 2 (LRT-2) Masinag extension project in Manila, to a consortium comprising Philippines-based Foresight Development & Surveying Company (FDSC) as well as South Korea-based companies Soosung Engineering Company Limited and Korea Rail Network Authority (KRNA).

The other consortia that had submitted bids for the project were J.F. Cancio & Associates, Development Engineering & Management Corporation and Engineering & Development Corporation, Filipinas Dravo Corporation, TCGI Engineers, Urban Integrated Consultants Incorporated and Oriental Consultants Company Limited, Schema Konsult Incorporated, Pertconsult International, KE Asia Incorporated, DCCD Engineering Corporation, Key Engineers Corporation and Proconsult Incorporated, Systra Philippines and Philipps Technical Consultants Corporation, and Science and Vision for Technology Incorporated and Yooshin Engineering Corporation.

The LRT2 Masinag extension project involves addition of 4.2 km to the existing 13.8-km line, eastward from the Santolan station along Marcos Highway in Pasig City. Two additional stations will be constructed along the elevated viaduct extending to the new terminal at the intersection of Marcos Highway and Sumulong Highway in Masinag, Cainta.

(1 PHP [Philippine Peso] = 0.02 USD)

Samsung SDS provides AFC system prototype for Hyderabad metro

L&T Metro Rail (Hyderabad) Limited (L&TMRL) has received the automatic fare collection (AFC) system prototype from South Korea-based Samsung SDS for the Hyderabad metro.

The prototype features slim ticket gates, payment by cash and debit/credit card, passenger-operated ticket vending machines, ticket readers, and smart card initialisation and personalisation machines.

It also provides facility to recharge smart cards through different modes such as the website, bank auto top-up, ATM and mobile banking. The first set of AFC equipment is scheduled to be delivered in June 2014.

EUROPE

Bombardier secures Crossrail rolling stock contract

Canada-based Bombardier Transportation has secured the contract worth GBP1 billion to provide 65 trains for the Crossrail underground railway in London, UK. The trains will be manufactured and assembled in Derby.

Scheduled to be completed in 2018, Crossrail will connect London Underground (LU), Docklands Light Railway (DLR), London Overground and National Rail services. It will increase the capital's rail capacity by 10 per cent.

The project involves laying a 118-km rail track from Maidenhead and Heathrow (in the west) to Shenfield and Abbey Wood (in the east) as well as the construction of 21-km twin-bore tunnels for the underground central section in central London, which will connect the western and eastern sections.

(1 GBP [British Pound] = 1.64 USD)

Bombardier secures order of 16 LRVs for Rotterdam; six trams for Linz

Rotterdamse Elektrische Tram (RET) in Rotterdam, Netherlands, has exercised an option worth EUR66 million with Canada-based Bombardier Transportation for 16 Flexity Swift light-rail vehicles (LRVs) to be operated on the Hook of Holland Line.

The existing system is being converted from a heavy-rail to a light-metro system. Delivery of the vehicles will start in 2016 and is expected to be completed by 2017.

The scope of the project involves connecting the existing east-west light-metro line to the Hook of Holland Line, west of Schiedam Centrum, and converting the rest of the line (between Vlaardingingen and Maassluis) as a light-metro.

Meanwhile, Bombardier Transportation also secured a contract worth USD26 million from the Linz Transport Authority to supply six additional Flexity 100-per-cent low-floor Cityrunner trams.

The new trams will be deployed on the extension of Line 3 to Traun, and are scheduled to be delivered by mid-2015. Each

vehicle will be 40 metres long, 2.3 metres wide, and have the capacity to accommodate 224 seated passengers. The trams will be manufactured at Bombardier's facility in Vienna.

Linz Linien GmbH and Bombardier have also announced the results of a 'smart tram' pilot project, which was launched in September 2013.

Under the pilot, sensors fitted on 23 Cityrunner trams collected data on 50 parameters and transmitted them to the operations control centre for analysis.

The results were then used to implement measures to improve energy efficiency, operating costs and passenger comfort.

This lowered energy consumption by 10.2 per cent, primarily through efficient heating, improved acceleration and superior braking.

(1 EUR [Euro] = 1.33 USD)

Alstom plans IPO for Transport business by June 2014

France-based Alstom is planning on a stock market listing to sell stake in its transport business by June 2014. Earlier in November 2013, Alstom announced that it was seeking a buyer for the transport business to make up for the losses suffered by the power business division. When no buyer emerged, the company is considering initial public offering (IPO) for the transport unit.

Alstom is the world's second-largest manufacturer of railway equipment (following Canada-based Bombardier Transportation).

Siemens delivers final MX3000 train for Oslo metro

Siemens has delivered the final MX3000 metro train to Oslo metro operator, Kollektivtransportproduksjon AS (KTP).

The first order for 33 trains was placed with Siemens in 2003. Subsequent orders were for 30 trains in 2005, 20 in 2008, and 32 in 2010, taking the total order to 115. Each train has an aluminium body, is 54 metres long, and has a capacity to accommodate 678 passengers.

The deliveries of the new trains allow the replacement of the older T1000 and T1300 stock, providing Oslo a uniform fleet of the new Siemens trains.

Virgin Media installs Wi-Fi at 10 more LU stations

Virgin Media, a UK-based telecom service provider, has installed Wi-Fi facilities at 10 more stations on the London Underground (LU) network.

These stations include West Hampstead, Finchley Central, Leytonstone, Wanstead, White City, Leyton, Newbury Park, Plaistow, Finchley Road and Upton Park.

In March 2012, Virgin Media had secured a contract from Transport for London (TfL) to provide Wi-Fi access on the LU. So far, 131 LU stations out of a possible 270 have Wi-Fi access. TfL is aiming to roll out Wi-Fi to all but four of the stations on its network by the end of 2014.

First Capital Connect secures six-month extension for Thameslink operations

UK-based train operating company, First Capital Connect, has secured a six-month extension in its contract to operate its Thameslink franchise, while UK's Department for Transport (DfT) is assessing the bids from five companies for the new extended franchise, which is due to start in September 2014 and have duration of seven years.

Currently, the Thameslink network connects Bedford, Luton Airport, central London, Wimbledon, Gatwick Airport and Brighton.

The new franchise will combine the existing Thameslink network with the entire Southern franchise as well as the Great Northern services.

Tenders were invited for the new Thameslink, Southern, Great Northern (TSGN) franchise in September 2013, and the DfT received bids from five companies. The winner is expected to be announced in May 2014.

Moscow metro awards rolling stock contract; opens Line 12 extension

Moscow Metro has awarded a RUB143.9-billion contract to Russia-based rolling stock provider Transmashholding's subsidiaries Metrovagonmash and Transholdleasing, for supplying 832 metro cars between 2014 and 2017. The contract includes maintenance for a period of 30 years.

The new cars will be configured as eight-car trains and initially enter service on Line 8 between Park Pobedy and Ramenky, once the section opens in 2015. The cars will later operate on further extensions of the line which are due to open from 2017.

Meanwhile, Moscow Metro has opened a 4.5-km underground extension of metro Line 12 from Ulitsa Starokachalovskaya to Bitevskiy Park, with an intermediate station at Lesoparkovaya.

The station at Bitevskiy Park provides interchange with Line 6, and Lesoparkovaya is part of a planned transport hub with park-and-ride facility.

Construction began on the extension in 2011. The project aims to improve transport to north and south Butovo, and relieve congestion from the southern end of Line 9.

(1 RUB [Russian Rouble] = 0.03 USD)

Pesa unveils first tram for Moscow

Poland-based Pojazdy Szynowe Pesa Bydgoszcz (Pesa) has unveiled its first low-floor tram, branded Foxtrot, for Moscow. The new vehicles will be delivered from March 2014 and March 2015.

In June 2013, Moscow had placed the order for 120 trams to Pesa and Russia-based Uraltransmash, with deliveries to take place between March 2014 and March 2015.

Each tram will be 26-metres-long and have maximum speed of 76 km/hr, capacity for 160 passengers (including 60 seated) and track gauge of 1,524 mm.

HS2 selects Imprima to deliver payment portal and database

The UK Department for Transport's (DfT) High Speed 2 (HS2) rail project has selected London-based virtual data room and financial documents provider, Imprima, to deliver an online payment portal and Universal Serial Bus (USB)-archived database.

The Imprima database will contain the environmental statement for the HS2 project and allow HS2 to provide public access to a well-structured file system.

MIDDLE EAST & AFRICA

DB International to review safety and operating standards of SRO

Saudi Railways Organisation (SRO) has awarded DB International (DB), a consultancy of Germany-based Deutsche Bahn AG, a contract to review its safety regime and operating standards by end-2014 and provide supervision and follow-up until end-2015.

Under the agreement, DB will prepare a series of technical manuals to support a training programme for SRO staff. The review will mainly focus on three fields, namely, technical and maintenance, rehabilitation and training, as well as research and knowledge.

RATP Dev-SAPTCO JV to operate buses in Riyadh

A joint venture (JV) of France-based Régie Autonome des Transports Parisiens Développement (RATP Dev) and Saudi Public Transport Company (SAPTCO) has been selected by the Saudi Arabia High Commission of Public Transportation to operate a new bus network in Riyadh.

The contact is now subject to final approval by the King of Saudi Arabia. The letter of award is expected to be issued by mid-March 2014.

The bus network includes an 83-km-long bus rapid transit (BRT) corridor, two circular routes as well as community bus lines and feeder buses. The project is part of the Riyadh Public Transport Project (PTP), which includes implementation of a metrorail system.

Drake & Scull Rail to deliver APM for Dubai International Airport

UAE-based Drake & Scull Rail, a subsidiary of Drake & Scull International PJSC (DSI) has secured a contract worth AED35 million to deliver an automated passenger mover system (APM) at the Dubai International Airport.

The APM will link the new Concourse 4 (currently being constructed by the Dubai Civil Aviation Authority) to Terminal-1 (to be developed by UAE-based Al Jaber LEGT Engineering & Contracting).

The contract covers complete mechanical, electrical, and plumbing (MEP) works as well as railway services including signals, traction power, maintenance of area power, compressed air and communications systems.

(1 AED [United Arab Emirates Dirham] = 0.27 USD ♦)

NORTH AMERICA

ADA-compliance of MetroLink stations in St. Louis

Country: USA

Organisation: Metro Transit – St. Louis

Description: Tenders are invited to upgrade MetroLink stations in St. Louis to comply with the Americans with Disabilities Act (ADA). The stations included for upgradation are University of Missouri - St. Louis South, Wellston, Delmar, Union Station and ticket counters at North Hanley, Forest Park, Clayton, Brentwood Garage and Shrewsbury.

Closing date: March 14, 2014

Contact: Attn: Metro Transit – St. Louis, 707 North First Street, St. Louis, MO 63102

Phone: +1 314 982 1400

Email: procurement@metrostlouis.org

Website: www.metrostlouis.org

Planning and construction of Montreal metro extension

Country: Canada

Organisation: Agence métropolitaine de transport (AMT)

Description: Tenders are invited to plan and construct the extension for the Montreal metro.

Closing date: March 19, 2014

Contact: Attn: Denis Cloutier, AMT, 700 rue De La Gauchetiere Ouest 26e etage, Montreal, QC H3B 5M2

Phone: +1 514 287 2464

Fax: +1 514 287 2460

Email: amt.qc.ca

Website: dcloutier@amt.qc.ca

Supply of rail signalling system for Baltimore metro

Country: USA

Organisation: Maryland Transit Administration

Description: Tenders are invited to provide a rail signalling system for the metro in Baltimore.

Closing date: March 20, 2014

Contact: Attn: Maryland Transit Administration, 6 St. Paul Street, Baltimore, MD 21202-1614

Phone: +1 410 539 5000

Website: mta.maryland.gov/

Supply of bus shelters in Springfield

Country: USA

Organisation: Springfield Mass Transit District

Description: Tenders are invited to supply and install five solar-powered bus shelters in Springfield.

Closing date: March 20, 2014

Contact: Attn: Erin Appenzelle, Springfield Mass Transit District, 928 South Ninth Street, Springfield, Illinois 62703-2497

Phone: +1 217 522 6087

Email: eappenzeller@smttd.org

Website: www.smttd.org

Supply of buses in Wichita

Country: USA

Organisation: Wichita Transit

Description: Tenders are invited to supply 35 diesel and 40 CNG buses in Wichita.

Closing date: April 25, 2014

Contact: Attn: City Purchasing Manager, Wichita Transit, 12th Floor, City Hall, 455 North Main, Wichita, Kansas

Phone: +1 316 268 4636

Website: www.wichitatransit.org/

ASIA PACIFIC

Provision of cab simulator for light-rail in Hong Kong

Country: Hong Kong

Organisation: MTR Corporation Limited

Description: Tenders are invited to provide a new cab simulator for the light-rail system in Hong Kong.

Closing date: March 14, 2014

Contact: Attn: C.P. Kam, Senior Contracts Engineer, MTR Corporation Limited, GPO Box 9916, Hong Kong

Phone: + 852 2993 7391

Fax: + 852 2993 7773

Website: www.mtr.com.hk/

Provision of electronic ticketing machines for buses in Jaipur

Country: India

Organisation: Jaipur City Transport Services Limited (JCTSL)

Description: Tenders are invited to design, develop, test, certify, install, commission, train, operate, maintain and manage electronic ticketing machines for 200 buses in Jaipur.

Closing date: March 14, 2014

Contact: Attn: Managing Director, JCTSL, II floor, Old Working Women Hostel, Behind Nehru Place, Lal Kothi Tonk Road, Jaipur

Phone: +91 141 274 4562

Email: jctsl.bus@gmail.com

Website: <http://www.jaipurbus.com/>

Repair and restoration of XLPE cable of Delhi metro

Country: India

Organisation: Delhi Metro Rail Corporation (DMRC)

Description: Tenders are invited to repair and restore the faulty 66 kV, 1Cx1200 sq mm Cross Linked Poly-ethylene (XLPE) cable for Line 3 of the Delhi metro.

Closing date: March 19, 2014

Contact: Attn: DMRC, 5th Floor, A-Wing Metro Bhawan, Fire Brigade Lane, Barakhamba Road, New Delhi-110001

Phone: +91 11 23 415 838

Fax: +91 11 23 417 908

Website: www.delhimetrorail.com/y

Construction of metro stations in Chennai

Country: India

Organisation: Chennai Metro Rail Limited (CMRL)

Description: Tenders are invited to complete the construction of metro stations in Chennai.

Closing date: March 21, 2014

Contact: Attn: Chief General Manager (Construction), CMRL, Harini Towers, No.7 Conron Smith Road, Gopalapuram, Chennai 600 086

Phone: +91 44 28 43 0023

Fax: +91 44 28 43 0043

Email: cgmcmrl@tn.gov.in

Website: chennaietrorail.gov.in/

Construction, operation and maintenance of bus shelters in Srinagar

Country: India

Organisation: Srinagar Municipal Corporation (SMC)

Description: Tenders are invited to construct, operate and maintain 30 stainless steel bus shelters in Srinagar.

Closing date: March 26, 2014

Contact: Attn: Commissioner, SMC, Karan Nagar, Kak Chowk, Srinagar, Jammu & Kashmir- 190010

Phone: +91 194 247 0466

Fax: +91 194 247 6931

Website: smcsite.org

Supply of ETMs in Uttarakhand

Country: India

Organisation: Uttarakhand Transport Corporation (UTC)

Description: Tenders are invited to supply electronic ticketing machines (ETM) in Uttarakhand.

Closing date: April 5, 2014

Contact: Attn: UTC, 1, Raj Vihar, Chakrata Road, Near Fri Gate, Raj Vihar, Balliwala, Dehradun, Uttarakhand 248001

Phone: +91 989 759 4771

Website: utc.uk.gov.in/

Provision of standard gauge track work for Kochi metro

Country: India

Organisation: Delhi Metro Rail Corporation (DMRC)

Description: Tenders are invited to supply, install, test and commission standard gauge track works in Mutton depot for Kochi metro.

Closing date: April 10, 2014

Contact: Attn: DMRC, 5th Floor, A-Wing Metro Bhawan, Fire Brigade Lane, Barakhamba Road, New Delhi-110001

Phone: +91 11 23 415 838

Fax: +91 11 23 417 908

Website: www.delhimetrorail.com/y

Supply of ETMs in Jaipur

Country: India

Organisation: Jaipur City Transport Services Limited (JCTSL)

Description: Tenders are invited to supply electronic ticketing machines (ETM) in Jaipur.

Closing date: April 10, 2014

Contact: Attn: Managing Director, JCTSL, 2nd Floor, Old Working Women Hostel, Behind Nehru Place, Lal Kothi, Jaipur 302015

Website: www.jaipurbus.com/

EUROPE

Provision of rolling stock designs in Île-de-France

Country: France

Organisation: Transamo

Description: Tenders are invited to provide exterior and interior designs for rolling stock for the T9 tramway in Île-de-France. The duration of the contract is 72 months from the date of award of the contract.

Closing date: March 12, 2014

Contact: Attn: Kennel Bénédicte, Transamo, 21 rue Camille

Desmoulins, 92789 Issy-les-Moulineaux, Cedex 9

Phone: +33 17 434 2222

Fax: +33 18 371 1878

Email: benedicte.kennel@transamo.com

Website: transamo.com/

Supply of rolling stock in Tbilisi

Country: Georgia

Organisation: Tbilisi Transport Company

Description: Tenders are invited to supply railway and tramway locomotives in Tbilisi.

Closing date: March 12, 2014

Contact: Attn: Levan Papashvili, Senior Procurement Service, Tbilisi Transport Company, 0112 Avenue Tbilisi, Station Square # 2

Phone: +995 322 357 777

Fax: +995 322 934 141

Email: lpapashvili@metro.ge

Website: ttc.com.ge/

Removal and replacement of compressors and air tanks in Paris metro

Country: France

Organisation: RATP

Description: Tenders are invited to remove and replace metro compressors and air tanks in Paris. The duration of the contract is 24 months from the date of award of the contract.

Closing date: March 12, 2014

Contact: Attn: RATP, 54 quai de la Rapée, 75599 Paris Cedex 12

Phone: +33 15 877 0687

Email: pierrette.labruyere@ratp.fr

Website: www.ratp.fr

Inspection services for tram line in Saint-Louis

Country: France

Organisation: Communauté de communes des Trois Frontières

Description: Tenders are invited to provide inspection services for the extension of tram line 3 in Saint Louis. The inspection services will be carried out from Basel to Saint-Louis station.

Closing date: March 13, 2014

Contact: Attn: Le président, Communauté de communes des Trois Frontières, place de l'Hôtel de Ville, CS 50199, Saint-Louis 68305

Phone: +33 38 970 9070

Fax: +33 38 970 9085

Email: direction@cc-3frontieres.fr

Website: http://cc-3frontieres.fr/

Bus transport services in Warsaw

Country: Poland

Organisation: Zarz'd Transportu Miejskiego w Warszawie

Description: Tenders are invited to provide public bus transport services operating within the Wieliszew Commune in Warsaw. The duration of the contract is from April 1, 2014 to March 31, 2015.

Closing date: March 13, 2014

Contact: Attn: Agnieszka Moczulska, Zarz'd Transportu Miejskiego w Warszawie, elazna 61, Warszawa 00-848

Phone: +48 22 459 4286

Fax: +48 22 459 4224

Email: zamowienia@ztm.waw.pl
Website: www.ztm.waw.pl

Supply and installation of bus shelters in Borken

Country: Germany
Organisation: Stadt Borken
Description: Tenders are invited to supply and install bus shelters in Borken. The duration of the contract is from September 1, 2014 to June 30, 2015.
Closing date: March 13, 2014
Contact: Attn: Herrn Knufmann, Stadt Borken, zentrale Vergabestelle, Im Piepershagen 17, Borken 46325
Phone: +49 286 193 9139
Fax: +49 28 619 396 2139
Email: daniel.knufmann@borken.de
Website: www.borken.de

Supply of rolling stock in Tbilisi

Country: Georgia
Organisation: Tbilisi Transport Company
Description: Tenders are invited to supply railway and tramway locomotives in Tbilisi.
Closing date: March 13, 2014
Contact: Attn: Levan Papashvili, Senior Procurement Service, Tbilisi Transport Company, 0112 Avenue Tbilisi, Station Square # 2
Phone: + 995 322 357 777
Fax: + 995 322 934 141
Email: lpapashvili@metro.ge
Website: ttc.com.ge/

Supply of low-floor buses in Stargard Szczeciński

Country: Poland
Organisation: Miejski Zak³ad Komunikacji
Description: Tenders are invited to supply 4 low-floor buses in Stargard Szczeciński. The duration of the contract is 60 months from the date of award of the contract.
Closing date: March 14, 2014
Contact: Attn: Marek Jarmoluk, Miejski Zak³ad Komunikacji, ul. Sk³adowa 1, Stargard Szczeciński 73-110
Phone: +48 915732213
Fax: +48 915732219
Email: mzk@mzk.stargard.pl
Website: www.mzk.stargard.pl

Rail transport services in Bydgoszcz, Poland

Country: Poland
Organisation: Województwo Kujawsko-Pomorskie
Description: Tenders are invited to provide rail transport services in Bydgoszcz. The duration of the contract is 36 months from the date of award of the contract.
Closing date: March 16, 2014
Contact: Attn: Olgierd Sobkowiak, Województwo Kujawsko-Pomorskie Plac Teatralny 2, pok. 237, Toruń 87-100
Phone: +48 56 621 8281
Fax: +48 56 621 8455
Email: o.sobkowiak@kujawsko-pomorskie.pl
Website: www.kujawsko-pomorskie.pl

Supply of low-floor buses in Bern

Country: Switzerland
Organisation: PostAuto Schweiz AG
Description: Tenders are invited to supply three low-floor buses in Bern.
Closing date: March 17, 2014
Contact: Attn: Urs Schläpfer, PostAuto Schweiz AG, Belpstrasse 37, 3030 Bern
Phone: + 41 58 386 6989
Email: fahrzeugeinkauf@postauto.ch
Website: www.postauto.ch/

Re-construction of tram terminal interchange in Czech Republic

Country: Czech Republic
Organisation: DOPRAVNÍ PODNIK míst Mostu a Litvínova
Description: Tenders are invited to re-construct the tram terminal interchange in the Czech Republic.
Closing date: March 17, 2014
Contact: Attn: Karel Benes, DOPRAVNÍ PODNIK míst Mostu a Litvínova, tø. Budovatelù 1395-1323, Bridge 43401
Phone: +420 476 769 011
Fax: +420 476 702 585
Email: benes@dpmost.cz
Website: dpmost.cz/

Supply of buses in Le Port

Country: France
Organisation: Territoire de la Côte Ouest
Description: Tenders are invited to acquire public transport buses (thermal, electric and hybrid) in Le Port. The duration of the contract is 48 months from the date of award of the contract.
Closing date: March 17, 2014
Contact: Attn: Territoire de la Côte Ouest, 1 rue Eliard Laude, BP 49, Le Port 97822
Phone: +33 26 232 1212
Fax: +33 26 232 2222
Email: marche@tco.re
Website: tco.re

Delivery of electric buses in Warsaw

Country: Poland
Organisation: Miejskie Zak³ady Autobusowe Sp. z o.o.
Description: Tenders are invited to deliver ten electric buses in Warsaw.
Closing date: March 18, 2014
Contact: Attn: Witold Majewski, Miejskie Zak³ady Autobusowe Sp. z o.o., ul. W³oœciañska 52, Warszawa 01-710
Phone: +48 225687514
Fax: +48 225687517
Email: vmaj@mza.waw.pl
Website: www.mza.waw.pl

Construction and extension of tram line in Bordeaux

Country: France
Organisation: Communauté urbaine de Bordeaux
Description: Tenders are invited to construct a new Médoc tram line, extend the existing tram lines A, B and C, as well as implement a partial terminus in Bordeaux. The contract is part of Bordeaux tram network Phase III. The duration of the contract is 24 months from the date of award of the contract.

Closing date: March 18, 2014

Contact: Attn: Direction de la commande publique, Communauté urbaine de Bordeaux, Esplanade Charles de Gaulle, Bordeaux Cedex 33076

Phone: +33 55 699 8484

Fax: +33 55 699 8783

Email: dcp@cu-bordeaux.fr

Website: www.lacub.com

Supply of low-floor buses in Verrenberg

Country: Germany

Organisation: Gerd Eisemann Omnibusverkehr

Description: Tenders are invited to supply low-floor buses in Verrenberg. The duration of the contract is from September 1, 2014 to November 30, 2014.

Closing date: March 18, 2014

Contact: Attn: Gerd Eisemann, Gerd Eisemann Omnibusverkehr, Wiesenstraße 7, Verrenberg 74613

Phone: +49 794 198 4081

Fax: +49 794 198 4083

Email: gerd.eisemann@gmx.de

Delivery of LRVs and rail cars in Dusseldorf and Cologne

Country: Germany

Organisation: Rheinbahn AG

Description: Tenders are invited to deliver 66 high-floored light-rail vehicles (LRVs) and 12 rail cars in Dusseldorf and Cologne.

Closing date: March 18, 2014

Contact: Attn: Oliver Rentsch, Rheinbahn AG, Hansaallee 1, Dusseldorf 40549

Phone: +49 211 582 4900

Fax: +49 211 582 4904

Email: hf6@rheinbahn.de

Website: www.rheinbahn.de

Construction of public transport terminal in Tirana, Albania

Country: Albania

Organisation: Municipality of Tirana (MoT)

Description: Tenders are invited to construct a public transport terminal in Tirana.

Closing date: March 18, 2014

Contact: Attn: Henrik Hysenbegasi, Director General, MoT, Sheshi Skënderbej, Nr.2/1001, Tirana, Albania

Phone: + 355 67 409 6653

Email: henrik.hysenbegasi@tirana.gov.al

Website: tirana.gov.al/

Provision of spare parts for Ikarbus electric buses in Sarajevo

Country: Bosnia and Herzegovina

Organisation: JKP Gras Sarajevo

Description: Tenders are invited to provide spare parts for electric buses in Sarajevo. The buses are manufactured by Ikarbus.

Closing date: March 19, 2014

Contact: Attn: Seco Karkelja, JKP Gras Sarajevo, No large tree. 1, Sarajevo 71000

Phone: +387 03 329 3278

Fax: +387 03 345 4691

Email: komercijala@gras.ba

Website: www.gras.ba

Modernisation of signal telecommunication system in Doboj

Country: Bosnia and Herzegovina

Organisation: Railway of Republika Srpska – ZRS

Description: Tenders are invited to modernise the signal telecommunication system along the railway lines Banja Luka-Doboj and Sevarlije-Doboj-Samac in Doboj.

Closing date: March 20, 2014

Contact: Attn: Dragan Calovic, Project Implementation Unit (PIU), Railway of Republika Srpska – ZRS, Kneza Milosa 105, Doboj 74000

Fax: + 387 05 324 1788

Email: dragan.calovic@zfbh.ba

Website: www.zrs-rs.com/

Bus transport services in Katowice

Country: Poland

Organisation: Komunikacyjny Zwi'zek Komunalny Górnoœl'skiego Okrêgu Przemys³owego

Description: Tenders are invited to provide bus transport services on line 969 in the municipalities of Siewierz and Wojkowice Church in Katowice. The duration of the contract is from June 1, 2014 to May 31, 2022.

Closing date: March 21, 2014

Contact: Attn: Danuta Kolmer, Komunikacyjny Zwi'zek Komunalny Górnoœl'skiego Okrêgu Przemys³owego, ul. Barbary 21A, Katowice 40-053

Phone: +48 32 743 8471

Fax: +48 32 743 8471

Email: dkolmer@kzkgop.com.pl

Website: www.kzkgop.com.pl

Construction of railway line in Liège

Country: Belgium

Organisation: Infrabel

Description: Tenders are invited to carry out railway construction work in Liège.

Closing date: March 21, 2014

Contact: Attn: Alain Adam, Infrabel,

rue Ernest Solvay 1, Liège 4000

Phone: + 32 42 412 110

Fax: + 32 42 412 280

Email: alain.adm @ infrabel.be

Website: www.infrabel.be/ený

Supply of low-floor buses in Eisenberg

Country: Germany

Organisation: JES Verkehrsgesellschaft mbH

Description: Tenders are invited to supply 10 low-floor buses in Eisenberg. The duration of the contract is six months from the date of award of the contract.

Closing date: March 23, 2014

Contact: Attn: Andreas Möller, JES Verkehrsgesellschaft mbH, Borgfeldtstraße 4, Eisenberg 07607

Phone: +49 36 691 4990

Fax: +49 366 914 9944

Email: a.moeller@jes-eisenberg.de

Website: www.jes-eisenberg.de

Establishing catenary system for tram line 310 in Bochum

Country: Germany
Organisation: Bochum-Gelsenkirchener Straßenbahnen AG
Description: Tenders are invited to establish a catenary system for the extension of the tram line 310 in Bochum. The duration of the contract is from June 1, 2014 to December 15, 2015.
Closing date: March 25, 2014
Contact: Attn: Dirk Voitiz, Bochum-Gelsenkirchener Straßenbahnen AG, Universitätsstraße 58, Bochum 44789
Phone: +49 234 303 2340
Fax: +49 234 303 3340
Email: dirk.voitiz@bogestra.de
Website: www.bogestra.de

Provision of bus transport service in Katowice

Country: Poland
Organisation: Komunikacyjny Zwi'zek Komunalny Górnośl'skiego Okr'egu Przemys³owego (KZK GOP)
Description: Tenders are invited to provide bus transport service on Line 146 in the municipalities of Ruda of Silesia and Bytom, Lines 86 and 286 in the municipalities of Zabrze, Line 41 in the municipalities of Gliwice, Giera³owice and Miko³ow in Katowice. The duration of the contract is from May 1, 2014 to May 31, 2022.
Closing date: March 25, 2014
Contact: Attn: Danuta Kolmer, KZK GOP, ul. Barbary 21A, Katowice 40-053
Phone: +48 32 743 8471
Fax: +48 32 743 8471
Email: dkolmer@kzkgop.com.pl
Website: www.kzkgop.com.pl

Provision of bus transport service in Gdynia

Country: Poland
Organisation: Zarz'd Komunikacji Miejskiej w Gdyni
Description: Tenders are invited to provide bus transport service on Line 146 in Gdynia. The duration of the contract is from June 19, 2014 to June 18, 2017.
Closing date: March 25, 2014
Contact: Attn: Mariusz Horoñ, Zarz'd Komunikacji Miejskiej w Gdyni, ul. Zakr'et do Oksywia 10, Gdynia 81-244
Phone: + 48 58 623 3312
Fax: + 48 58 623 3022
Email: zkm@zkmgdynia.pl
Website: www.zkmgdynia.pl

Operation of urban transport services in Concarneau, France

Country: France
Organisation: Concarneau Cornouaille Agglomération
Description: Tenders are invited to operate public transport services in Concarneau. The duration of the contract is 45 months from the date of award of the contract.
Closing date: March 26, 2014
Contact: Attn: M. le president, Concarneau Cornouaille Agglomération, 1 rue Victor Schoelcher, CS 50636, Concarneau Cedex 29186
Phone: +33 29 897 7150
Fax: +33 29 897 7151
Email: marches@concarneaucornouaille.fr
Website: www.concarneau-cornouaille.fr

Delivery of buses in Kedzierzyn-Kozle

Country: Poland
Organisation: Urz'd Miasta K'edzierzyn-KoŸle
Description: Tenders are invited to deliver three buses in Kedzierzyn-Kozle. The duration of the contract is from May 1, 2014 to February 28, 2015.
Closing date: March 27, 2014
Contact: Attn: Stanis³aw Ÿyczkowski, Urz'd Miasta K'edzierzyn-KoŸle, ul. Piramowicza 32
47-200 Kedzierzyn-Kozle
Phone: + 48 77 403 4451
Fax: + 48 77 403 4451
Email: zp@kedzierzynkozle.pl
Website: www.kedzierzynkozle.pl

Supply of tram cars for Daugavpils tramway

Country: Latvia
Organisation: Daugavpils satiksme
Description: Tenders are invited to supply tram cars in Daugavpils as part of the city's tramway infrastructure renovation programme.
Closing date: March 27, 2014
Contact: Attn: Sabīne Œoepste, Daugavpils satiksme, 18. Novembra iela 183, Daugavpils, LV-5417
Phone: +371 65 433 632
Fax: +371 65 434 203
Email: tramvaju@dautkom.lv
Website: www.tramvajs.daugavpils.lv

Supply of low-floor buses in Geislingen

Country: Germany
Organisation: Sihler GmbH Omnibusverkehr
Description: Tenders are invited to supply two low-floor buses of length 12 metres in Geislingen. The duration of the contract is from September 1, 2014 to November 13, 2014.
Closing date: March 28, 2014
Contact: Attn: Tobias Maier, Sihler GmbH Omnibusverkehr, Grube-Karl-Straße 18, Geislingen 73312
Phone: +49 73 319 5510
Fax: +49 733 195 5120
Email: info@ov-sihler.de

Supply of light-rail equipment in Vratsa, Bulgaria

Country: Bulgaria
Organisation: Natsionalna kompaniya Zhelezopatna infrastruktura
Description: Tenders are invited to supply light-rail equipment in Vratsa.
Closing date: March 28, 2014
Contact: Attn: Vladimir Georgiev, DP Natsionalna kompaniya Zhelezopatna infrastruktura, bul. Knyaginya Mariya Luiza No. 110, Sofiya 1233
Phone: +359 29 326 135
Fax: +359 29 316 037
Website: www.rail-infra.bg

Supply of low-floor buses in Babenhausen

Country: Germany
Organisation: brandner unterallgäu AG

Description: Tenders are invited to supply six low-floor buses in Babenhausen.

Closing date: March 31, 2014

Contact: Attn: Karl Brandner, brandner unterallgäu AG, Auf der Wies 21, Babenhausen 87727

Phone: +49 83 339 2100

Fax: +49 833 392 1010

Email: charlie@brandner.de

Website: www.brandner.de

Supply of low-floor buses in Leonberg-Warmbronn

Country: Germany

Organisation: Kappus-Reisen GmbH & CoKG

Description: Tenders are invited to supply two low-floor buses in Leonberg-Warmbronn. The duration of the contract is from October 15, 2014 to December 15, 2014.

Closing date: April 1, 2014

Contact: Attn: W. Kappus, Kappus-Reisen GmbH & CoKG, Brandenburger Straße 16-18

Leonberg-Warmbronn 71229

Phone: +49 715 297 9690

Fax: +49 71 527 3595

Email: w.kappus@kappus.eu

Website: kappus.eu/

Project management system for tramway in Paris

Country: France

Organisation: TRANSAMO

Description: Tenders are invited to provide a project management system for the tramway line T9 in Paris.

Closing date: April 1, 2014

Contact: Attn: Bénédicte Kennel, TRANSAMO, 21 rue Camille Desmoulins, CS 70017, 92789 Issy-les-Moulineaux Cedex 9

Phone: + 33 17 434 2222

Email: benedicte.kennel@transamo.com

Website: www.transamo.fr/

Supply of low-floor buses in Hanau

Country: Germany

Organisation: Hanauer Straßenbahn GmbH

Description: Tenders are invited to supply low-floor buses in Hanau. The duration of the contract is from June 1, 2014 to December 31, 2014.

Closing date: April 1, 2014

Contact: Attn: Frau Senftleben, Hanauer Straßenbahn GmbH, Daimler Street 5, Hanau 63450

Phone: +49 6181365463

Fax: +49 6181365434

Email: birgit.senftleben@hu-eg.de

Website: www.hu-eg.de

Re-designing of bus shelters in Winterthur, Switzerland

Country: Switzerland

Organisation: City of Winterthur Department Technical services

Description: Tenders are invited to re-design bus shelters in Winterthur.

Closing date: April 2, 2014

Contact: Attn: Jeannette boy Hans, City of Winterthur Department Technical services, Tösstalstrasse 86, Neumarkt

1, 8402 Winterthur, Switzerland

Phone: + 41 52 267 5472

Fax: + 41 52 267 6286

Email: tiefbauamt@win.ch

Website: www.tiefbauamt.winterthur.ch

Supply of low-floor buses in Würzburg

Country: Germany

Organisation: NVG Omnibus-Betriebsgesellschaft mbH

Description: Tenders are invited to supply six low-floor buses in Würzburg. The duration of the contract is seven months from the date of award of the contract.

Closing date: April 4, 2014

Contact: Attn: Herrn Steffen Nenner, NVG Omnibus-Betriebsgesellschaft mbH, Delpstraße 18, Würzburg 97084

Phone: +49 93 166 0640

Fax: +49 93 166 0641

Email: info@nvg-omnibus.de

Website: www.nvg-omnibus.de

Delivery of low-floor intercity buses in Plön

Country: Germany

Organisation: Verkehrsbetriebe Kreis Plön GmbH

Description: Tenders are invited to supply three low-floor intercity buses in Plön. The buses will be 12-metres-long and feature diesel engine of about 220 kW.

Closing date: April 4, 2014

Contact: Attn: Andreas Scheiner, Verkehrsbetriebe Kreis Plön GmbH, Diedrichstrasse 5, Kiel 24143

Phone: +49 43 170 580

Fax: +49 431 705 815

Email: info@vkg.de

Website: www.vkg.de

Bus transport services in Plovdiv, Bulgaria

Country: Bulgaria

Organisation: Obshtina Plovdiv

Description: Tenders are invited to provide bus transport services in Plovdiv.

Closing date: April 4, 2014

Contact: Attn: Todor Todorov, direktor na direktsiya, Obshtina Plovdiv, pl. Stefan Stambolov No. 1, Plovdiv 4000

Phone: +359 32 656 760

Fax: +359 32 656 752

Website: www.plovdiv.bg

Supply of low-floor buses in Opole, Poland

Country: Poland

Organisation: Miasto Opole

Description: Tenders are invited to supply two low-floor buses in Opole.

Closing date: April 7, 2014

Contact: Attn: Magdalena Eysieñ, Miasto Opole, Rynek-Ratusz, Opole 45-015

Phone: +48 774511921

Fax: +48 774549844

Email: pzp@um.opole.pl

Website: www.bip.um.opole.pl

Supply of low-floor buses in Ribnitz Damgarten, Germany

Country: Germany
Organisation: Kraftverkehrsgesellschaft mbH Ribnitz-Damgarten (KVG)
Description: Tenders are invited to supply four intercity buses in Ribnitz Damgarten. The buses should be low-floored and have length of 12 metres. The duration of the contract is from October 1, 2014, to December 31, 2014.
Closing date: April 7, 2014
Contact: Attn: Herrn Seifert, KVG, Am Nettelrade 5, Ribnitz-Damgarten 18311
Phone: +49 383 1241 4031
Fax: +49 383 1241 4033
Email: kersten.seifert@nahverkehr-stralsund.de
Website: www.kvg-ribnitz.de

Provision of bus transport services in Katowice

Country: Poland
Organisation: Komunikacyjny Zwi'zek Komunalny Górnoœl'skiego Okrêgu Przemys³owego (KZK GOP)
Description: Tenders are invited to provide bus transport services on Line 67 and 97 in the municipalities of Bobrowniki, Psary, Wojkowice, Bedzin in Katowice. The duration of the contract is from July 1, 2014, to June 30, 2022.
Closing date: April 8, 2014
Contact: Attn: Danuta Kolmer, KZK GOP, ul. Barbary 21A, Katowice 40-053
Phone: +48 32 743 8471
Fax: +48 32 743 8471
Email: dkolmer@kzkgop.com.pl
Website: www.kzkgop.com.pl

Provision of DMS for buses in Ireland

Country: Ireland
Organisation: National Transport Authority
Description: Tenders are invited to develop and implement a new data management system (DMS) for bus services in Ireland.
Closing date: April 8, 2014
Contact: Attn: Mark Bradwell, National Transport Authority, Dun Sceine Iveagh Court, Harcourt Lane, Ireland
Phone: + 353 01 879 8362
Website: www.nationaltransport.ie/

Supply and maintenance of bus shelters in Thiers, France

Country: France
Organisation: Ville de Thiers
Description: Tenders are invited to provide, install, maintain and service bus shelters in Thiers. The duration of the contract is 108 months from the date of award of the contract.
Closing date: April 10, 2014
Contact: Attn: M. le maire de Thiers, Ville de Thiers, 1 rue François Mitterrand, Thiers 63300
Phone: +33 47 380 8880
Fax: +33 47 380 8881
Email: csauvant@ville-thiers.fr
Website: ville-thiers.fr

Supply of hybrid electric buses in Messina, Italy

Country: Italy
Organisation: Istituto di Tecnologie Avanzate per l'Energia "Nicola Giordano" (ITAE)
Description: Tenders are invited to supply hybrid electric buses in Messina.
Closing date: April 13, 2014
Contact: Attn: Antonio Andaloro, ITAE, Via Santa Lucia sopra Contesse 5, Messina 98126
Phone: +39 090624260
Fax: +39 090624247
Email: antonio.andaloro@itae.cnr.it
Website: www.itae.cnr.it

Delivery of EMUs in Oslo

Country: Norway
Organisation: Flytoget AS
Description: Tenders are invited to deliver eight electric multiple unit (EMU) trains in Oslo. The duration of the contract is from December 1, 2014 to December 1, 2017.
Closing date: April 25, 2014
Contact: Attn: Tom Lund, Flytoget AS, Airport Express AS Postboks 19 Sentrum, Oslo 0101
Phone: + 47 23 159 000
Fax: + 47 23 15 9001
Email: nyeflytog@flytoget.no
Website: www.flytoget.no

MIDDLE EAST & AFRICA

Construction of depot and entry portal for Tel Aviv LRT

Country: Israel
Organisation: NTA - Tel-Aviv Metropolitan Mass Transit System Limited
Description: Tenders are invited to construct a depot and the entry portal to the main tunnels for the Red Line of the light-rail transit (LRT) in Tel Aviv.
Closing date: March 20, 2014
Contact: Attn: Krzysztof Majus, NTA - Tel-Aviv Metropolitan Mass Transit System Limited, Azrieli Towers, Menachem Begin Rd. 132, Tel Aviv
Phone: +972 03 724 3000
Email: depot_tender@nta.co.il
Website: www.nta.co.il/

Operation of buses in Jerusalem

Country: Israel
Organisation: Ministry of Transport
Description: Tenders are invited to operate bus services in Jerusalem. The duration of the contract is 78 months from the date of award of the contract.
Closing date: March 30, 2014
Contact: Attn: Ministry of Transport, 5 Bank Israel Street, Government Complex, Jerusalem Phone: + 972 26 66 3333
Website: en.mot.gov.il/◆

Global Mass Transit Report

Information and analysis on the global mass transit industry

The mission of **Global Mass Transit** is simple and modest - to provide decision makers with up-to-date and comprehensive information and analysis on the global mass transit industry. We cover metro, bus, light rail, regional rail, and inter-modal passenger transport.

Global Mass Transit keeps you informed on all the key developments, trends, and issues in the sector. It tracks major projects, contracts, and investments. It profiles leading mass transit authorities/operators and discusses their strategies. It reports on regulatory initiatives and examines their implementation. It provides the latest available data and statistics. It also features the views and perspectives of experts and top industry players.

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