Opportunities for Private Sector Collaboration with ADB on Developing Innovative Transport Projects

Tyrrell Duncan,
Technical Advisor (Transport)
ADB in Brief

• Founded in 1966
• Aim is an Asia Pacific free of poverty
• Owned by 67 countries – 48 regional, 19 nonreg
• $165B subscribed capital, triple-A credit rating
• Provides loans, grants, TA, equity, policy dialogue in 44 developing member countries
• HQ in Manila, 29 resident missions, 3 representative offices
• In 2015 provided $27B of assistance, which included $16B of ADB financing
ADB’s Role in Infrastructure Development

- Developing the regulatory environment
- Preparing, planning and packaging projects
- Introduction of improved technologies to achieve quality infrastructure
- Support and advice during implementation
- Market-based and concessional financing of investments
- Credit enhancements & equity investments to share risks with private sector
- Development of financial markets and innovative financing modalities
- Environmental and social safeguards
ADB Financial Products – Sovereign

Financing of government projects, policy based loans/programs, financial intermediation, emergency assistance, countercyclical support, TA loans, guarantees

Ordinary capital resources (OCR)
- ADB issues bonds, lends with small interest spread
- For project loans, grace period may be ±5 years and repayment period may be ±15-20 years

Asian Development Fund (ADF)
- ADF is financed by donors, provides grants & soft loans to least developed countries
- In 2017 it will merge with OCR to expand capital, will still provide soft terms to least dev countries

<table>
<thead>
<tr>
<th>2015 approvals</th>
<th>$B</th>
</tr>
</thead>
<tbody>
<tr>
<td>OCR loans</td>
<td>10,790</td>
</tr>
<tr>
<td>Concessional financing</td>
<td>2,872</td>
</tr>
<tr>
<td>of which grants</td>
<td>358</td>
</tr>
<tr>
<td>TOTAL</td>
<td>13,662</td>
</tr>
</tbody>
</table>
## ADB Financial Products – Nonsovereign

### Loans for direct financing of private projects
- market based rates & fees
- floating rates at a spread over LIBOR or Euro interbank rate, also fixed

### Equity investments in enterprises & private equity funds

### Political risk and partial credit guarantees to enhance risk profile of transaction to attract commercial lenders

<table>
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<tr>
<th>2015 approvals</th>
<th>$B</th>
</tr>
</thead>
<tbody>
<tr>
<td>OCR loans</td>
<td>2,626</td>
</tr>
</tbody>
</table>

Project must have developmental impacts/demonstration effects, not just financial return
2015 ADB Operations – OCR, ADF, Confinancing, Sovereign & Nonsov

Total financing approved in 2015 = $27B

- OCR: $13.4 billion
- ADF: $2.9 billion
- Commercial Cofinancing: $13.4 billion
- Official Cofinancing: $4.6 billion
- Nonsov: $0.0 billion
- Sov: $10.6 billion

Total: $27.0 billion
ADB’s evolving role

**ADB lending** – OCR-ADF merger to raise lending from $16B in 2015 to $20B in 2020

**Cofinancing** – from $16+11=27B in 2015 to $20+20=40B in 2020

**PPPs** – new PPP Office to expand PPP operations – e.g. Philippines North-South rail project

**Finance+++** = lending + knowledge + leverage

**Climate change** – ADB lending for mitigation and adaptation to reach $6B by 2020
ADB transport operations
Transport is largest sector for ADB lending

Transport lending ($ B)

Share of ADB lending
2 sides of transport...

• Transport **enables** economic & social activity, provides access to opportunities, services

• **But** has **negative effects** too - congestion, emissions, environment impacts, accidents
Massive investment needs

- **$2.5 trillion** for transport in developing Asia, 2010-20
- Poor countries need basic access
- Others face capacity bottlenecks
- Asia’s rapidly growing cities need urban transport
Extending access, connectivity
Problem of rapid motorization

Source: ADB and IEA, 2011
Congestion

2-5% of GDP
Air pollution

2-4% of GDP
Rising GHG emissions

- Transport is 23% of global energy-related GHG emissions
- Land transport is $\frac{3}{4}$ of transport GHG emissions
- Land transport GHG emissions to **double by 2050** based on current trend
Unsafe roads

- *645,000 annual road deaths* and 30 million injuries in developing Asia
- Leading cause of death for 15-44 year olds, 2nd leading cause for 6-14 year olds
- Vulnerable users are 50–75% of deaths
- Costs 2-5% of GDP
ADB’s Sustainable Transport Initiative

- STI approved in 2010
- Aims to transform ADB transport operations
- Covers a 10 year period, 2010-20
Sustainable transport is...

✓ accessible
✓ affordable
✓ environment friendly
✓ safe
Avoid-Shift-Improve Paradigm

Avoid
the need to travel

Shift
to sustainable modes

Improve
efficiency of all modes

Lower congestion, emissions, air pollution, road accidents, respiratory & health problems
STI priorities and targets

STI lending directions

- Mainstream sustainability in roads
- Scale up 4 areas

- Urban transport
- Addressing climate change
- Cross-border transport & logistics
- Road safety & social sustainability

Sustainable transport systems

Accessible
Affordable
Environment friendly
Safe

STI subsector lending targets
Progress against STI lending targets
Total of 28 loans and grants and 29 technical assistance projects approved.

Projects represented a total of $2.8 billion in ADB investment, 17% of total ADB.

Serving 25 countries.
Transport approvals by subregion, 2015

- Central & West: 37% (37%)
- East: 14% (14%)
- Pacific: 4% (4%)
- South: 35% (35%)
- South East: 10% (10%)
- Private Sector: 0% (0%)
Examples of road transport approvals, 2015

**India**
- Rural Connectivity Investment Program - Tranche 3 $273 million
- Second Jharkhand State Road Project $200 million

**Kiribati**
- Road Rehabilitation Project (Additional Financing) $2 million

**Myanmar**
- Greater Mekong Subregion East-West Economic Corridor Eindu To Kawkareik Road Improvement $100 million
Examples of railways approvals, 2015

Bangladesh

Railway Rolling Stock Project

$200 million
Examples of urban transport approvals, 2015

Armenia
Sustainable Urban Development Investment Program - Tranch 2
$113 million

Lao PDR
Vientiane Sustainable Urban Transport Project
$35 million

Viet Nam
Ha Noi Metro Line System Project (Line 3: Nhon-Hanoi Station Section) (Additional Financing)
$65 million
Transport lending pipeline, 2016-18

$ billion

<table>
<thead>
<tr>
<th>Year</th>
<th>Roads</th>
<th>Urban Transport</th>
<th>Rail</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>2.2</td>
<td>0.6</td>
<td>0.3</td>
<td>0.1</td>
</tr>
<tr>
<td>2016p</td>
<td>3.5</td>
<td>1.2</td>
<td>0.5</td>
<td>0.1</td>
</tr>
<tr>
<td>2017p</td>
<td>3.5</td>
<td>1.2</td>
<td>0.5</td>
<td>0.1</td>
</tr>
<tr>
<td>2018p</td>
<td>5.0</td>
<td>2.7</td>
<td>0.7</td>
<td>0.3</td>
</tr>
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</table>

ADB
<table>
<thead>
<tr>
<th>Subsector</th>
<th>Projects in 2016-18 pipeline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roads (non-urban)</td>
<td>Av. annual lending of $0.8–1B in each of Central &amp; West, South, SE Asia regions; lower in East Asia, Pacific. In many DMCs, large programs in BAN, IND, VIE, KAZ, PAK, AFG</td>
</tr>
<tr>
<td>Rail (non-urban)</td>
<td>Expanded lending especially in South Asia in 2017, 2018. Major projects include BAN, IND, PRC, AFG, with new rail lending in UZE, AZE, SRI, MYA, MON</td>
</tr>
<tr>
<td>Water transport</td>
<td>Small but important support for ports and shipping, mainly in Pacific: RMI, TIM, SOL, SAM, also MLD</td>
</tr>
<tr>
<td>Air transport</td>
<td>Airports and related support mostly in small DMCs: BHU, PNG, MYA, RMI, NEP, also UZE airport</td>
</tr>
<tr>
<td>Urban public transport</td>
<td>In 2017 and 2018 more support for metro in Viet Nam, BRTs in several PAK cities, KAZ, MON, PHI, GEO mass transit</td>
</tr>
<tr>
<td>Urban roads and traffic mgt</td>
<td>Often as part of urban development projects. ARM, IND, MON, PRC, BAN, VAN</td>
</tr>
<tr>
<td>Multimodal logistics</td>
<td>PRC river-rail-road logistics hub</td>
</tr>
</tbody>
</table>
Future opportunities for innovative transport projects
Future opportunities in transport

- Mass transit
- Multimodal transport hubs
- Multimodal freight hubs
- Energy efficient and safer transport technologies
- Intelligent transport systems
  - Electronic road pricing systems
  - Electric vehicles
  - Green urban corridors
  - Structured financing for rail and mass transit
Future opportunities:
mass transit/metro and light rail
# Future opportunities: mass transit/metro and light rail

<table>
<thead>
<tr>
<th>General rationale</th>
<th>High quality high volume mass transit needed for large, densely populated cities</th>
</tr>
</thead>
</table>
| **Types of high-level technology** | Overall system design  
Advanced tunneling  
Traction system  
Locomotives and rolling stock  
Signaling and train control system  
Telecom  
Electronic fare collection  
Train information system for users |
| **Approved projects** | Ha Noi and Ho Chi Minh metros, Viet Nam  
Jaipur metro, India; Tblisi metro, Georgia |
| **Planned projects** | Dhaka metro, Bangladesh; Colombo suburban light rail, Sri Lanka |
Future opportunities: mass transit/bus rapid transit

- ADB’s first BRT project in Lanzhou, PRC – $150m loan approved late 2009 for total project of $462m
- Opened in late 2012, serves 300,000 daily trips
- Bikeshare for 10,000 bikes along BRT corridor
## Future opportunities: mass transit/bus rapid transit

| General rationale | More affordable high quality mass transit needed for cities while still at low/middle income stage  
|                  | Cost effective mass transit option for secondary cities |
| Types of high-level technology | Overall system design  
|                              | BRT stations installation  
|                              | Automated traffic management system  
|                              | Bus management system  
|                              | Electronic fare collection  
|                              | Bus information system for users |
| Approved projects | Lanzhou (above), Yichang, Fuzhou and Ji’an projects, all in PRC  
|                  | Dhaka, Bangladesh; Ulaanbaatar, Mongolia; Vientiane, Lao PDR |
| Planned projects  | Karachi, Lahore and Peshawar in Pakistan |
IMPROVING INTERCHANGES

TOWARD BETTER MULTIMODAL RAILWAY HUBS IN THE PEOPLE’S REPUBLIC OF CHINA
Future opportunities: multimodal passenger hubs

**General rationale**
Well-designed hubs ensure ease of passenger transfer between modes, and create complementary commercial opportunities

**Types of high-level technology**
Advanced passenger station/hub design

**Approved projects**
TA on improving interchanges, PRC

**Planned projects**
E’mei-Miyi rail project, PRC
Yuxi-Mohan rail project, PRC
## Future opportunities: multimodal freight hubs

**General rationale**
Well-designed hubs ensure easy of passenger transfers between modes, and create complementary commercial opportunities within and near the hubs.

<table>
<thead>
<tr>
<th>Types of high-level technology</th>
<th>Advanced passenger station/hub design</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Approved projects</strong></td>
<td>No</td>
</tr>
<tr>
<td><strong>Planned projects</strong></td>
<td>Chongqing logistics project, PRC</td>
</tr>
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<td></td>
<td>Inland customs depot proposals, South Asia</td>
</tr>
</tbody>
</table>
Future opportunities: energy efficient and safer transport technologies

<table>
<thead>
<tr>
<th>General rationale</th>
<th>Introduce technologies by retrofitting or replacement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Types of high-level technology</td>
<td>Lower energy/lower emission and/or safer railway locomotives, rolling stock, buses</td>
</tr>
<tr>
<td>Approved projects</td>
<td>Railway energy efficiency and safety, PRC (nearing completion)</td>
</tr>
<tr>
<td>Planned projects</td>
<td>Locomotive energy efficiency project, India</td>
</tr>
</tbody>
</table>
## Future opportunities: highways ITS

<table>
<thead>
<tr>
<th>General rationale</th>
<th>Using information on traffic, road conditions and hazards improves transport efficiency and safety</th>
</tr>
</thead>
</table>
| Types of high-level technology | Travel information systems, road safety systems  
Vehicle registration systems |
| Approved projects | TA study of overall highway ITS architecture, PRC  
TA study of ITS for highway safety, PRC |
| Planned projects | Highway ITS in Kazakhstan, Papua New Guinea |
## Future opportunities: electronic road pricing

<table>
<thead>
<tr>
<th>General rationale</th>
<th>Efficient, equitable and sustainable method of charging for road use and externality costs. Pricing can moderate urban congestion and generate revenue to finance public transport.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Types of high-level technology</td>
<td>Advanced systems for tracking and charging vehicles based on distance and/or time.</td>
</tr>
<tr>
<td>Approved/planned projects</td>
<td>No</td>
</tr>
</tbody>
</table>
## Future opportunities: electric vehicles

<table>
<thead>
<tr>
<th>General rationale</th>
<th>Infrastructure facilitates e-vehicle take-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Types of high-level technology</td>
<td>Charging infrastructure</td>
</tr>
<tr>
<td>Approved projects</td>
<td>e-trikes, Philippines</td>
</tr>
<tr>
<td>Planned projects</td>
<td>No</td>
</tr>
</tbody>
</table>
Future opportunities: green urban corridors built around mass transit
## Future opportunities: green urban corridors

<table>
<thead>
<tr>
<th>General rationale</th>
<th>Construction/renewal of strategic transport transit/pedestrian corridors creates opportunity for smart city development, with part of investment recoverable from land values and commercial activities. More green corridors can be added after initial success</th>
</tr>
</thead>
<tbody>
<tr>
<td>Types of high-level technology</td>
<td>Wide-ranging – mass transit, nonmotorized transport, smart city design and implementation, commercial and residential property development</td>
</tr>
<tr>
<td>Approved projects</td>
<td>TA on future cities program. Urban trust funds available to support project concept development</td>
</tr>
<tr>
<td>Planned projects</td>
<td>No</td>
</tr>
</tbody>
</table>
**Future opportunities: structured finance to scale up rail and mass transit investment**

<table>
<thead>
<tr>
<th>General rationale</th>
<th>Rail and mass transit projects require much larger investment capital than ADB or other financiers can alone provide, so introduction of more advanced structured financing models using mix of domestic and international financing is necessary to enable investment of scale needed. Participation of banks and financial markets can be effective for ensuring commercial discipline.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Types of high-level technology</strong></td>
<td>Advanced financial structuring, with mix of financing sources and substantial domestic resources mobilization – domestic bonds, syndicated loans, guarantees, ADB sovereign financing.</td>
</tr>
<tr>
<td><strong>Approved projects</strong></td>
<td>No</td>
</tr>
<tr>
<td><strong>Planned projects</strong></td>
<td>No</td>
</tr>
</tbody>
</table>
Mexico: Metro improvement - Financing structure

FIMETRO
(Fiduciary Fund set for 50 years signing the loans and issuing bonds)

SISTEMA DE TRANSPORTE COLECTIVO DE DISTRICTO FEDERAL (STCDF)

Increase of tariff in 2013 to feed an investment fund (2 pesos additional on top of 3 pesos / paratransit 6-13 pesos)

BBVA – Bancomer
(Acting bank on behalf of FIMETRO)

AFD, ECA, local banks

PROJECT BONDS

Payment to contractors based on International competitive bidding process

Mexico City
Metro Company Project Office

Project improvement contractors

- Rolling stock renewal
- Signalling improvement
- Line 12 extension
- Track and alignment modernization

Source: Arnaud Dauphin, 2016
How to work with ADB

Ways of working – directly with ADB, indirectly by working for ADB clients on ADB-funded projects

As consultants – bid for project preparatory technical assistance to prepare lending projects

As contractors – bids/subcontract for ADB-financed contracts

As investors – developers and financiers of private/PPP projects seeking ADB finance

As knowledge or trust fund partners – supporting proof-of-concept work to show merits of innovative and advanced solutions in DMCs
Scope for developing innovative solutions within ADB project cycle

Country Partnership Strategy/Regional Cooperation Strategy

ADB Project Cycle

Completion/Evaluation

Preparation

Implementation

Approval

Seek knowledge partner/trust fund support to help country consider innovative/advanced project concepts

Recruit consultants for project preparatory TA

Recruit design consultants

Procure contractors/suppliers

or recruit design-build contractor?
ADB sovereign operations
– procurement of contractors/suppliers

Procurement principles – procure from member countries, economy and efficiency, fairness, transparency

Prequalification – required for most larger civil works contracts and complex equipment supply contracts

Procedures for technical and price proposals

• Single-Stage: One-Envelope Bidding Procedure
• Single-Stage: Two-Envelope Bidding Procedure
• Two-Stage Bidding Procedure
• Two-Stage: Two-Envelope Bidding Procedure
ADB nonsovereign operations – applying for ADB assistance

ADB welcomes proposals from developers and financiers of private sector infrastructure projects and PPPs. There is no standard form of application but typically the information required may include:

- Project description
- Background on sponsors
- Implementation arrangements
- The market
- Cost estimates
- Financial model
- Permits of licenses

- Feasibility study
- Ownership structure
- Project operations
- Environmental/social aspects
- Financing plan
- Risk analysis
Conclusions

Transport is a major part of ADB operations – about 1/3 of ADB lending in most years

DMCs need more advanced solutions to fit their situation – sustainability, urbanization, affordability

ADB now focuses on sustainable transport – more urban transport and railways, less roads

ADB wishes to provide more advanced solutions – some already being brought in, others need dialogue with DMCs and proof-of-concept

ADB invites partnership to speed up transition – trust fund and knowledge partnership with donors, private sector

ADB invites private sector interest – as consultants, contractors, proposers/financiers, knowledge/trust fund partners
See you in Manila for the 5th ADB Transport Forum 13-15 September 2016

Thank you!