Project Financing for PPPs – Challenges in Emerging Markets

Macquarie Capital

April 2015
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Key Takeaways
Key Takeaways

1. Time for a fundamental rethink on the issue of financing of infrastructure in emerging markets

2. Too many conferences and not enough action – Governments need to grasp the nettle on all the requirements around bid rules that they are not well aware of

3. Policies have to be more responsive to private investor needs

4. Policies need to be more holistic and coordinated across Government

5. Policies need to include developing better and more educated national savings pools

6. Asset recycling has a key role to play in providing capital

7. It is time for a private sector led “Gold Standard” that can be presented to Governments at all levels on a take it or leave it basis – this initiative should be led by the new G20 sponsored Global Infrastructure Hub
Introduction to Macquarie Group

Global office locations – Asia-Pacific focus

US
- Atlanta
- Austin
- Bloomfield Hills
- Boston
- Carlsbad
- Chicago
- Colorado Springs
- Columbus
- Dallas
- Denver
- Duluth
- El Paso
- El Segundo
- Franklin
- Glen Allen
- Houston
- Irving
- Jacksonville
- Lake Success
- Los Angeles
- Miami
- Nashville
- New York
- Philadelphia
- Rockville
- Rolling Meadows
- San Diego
- San Francisco
- San Jose
- Santa Barbara
- Savannah
- Seattle
- West Hartford
- Nashville
- Ontario
- Ottawa
- Portland
- Sacramento
- Seattle
- St Louis
- Stamford
- Tampa
- Toronto
- Waltham
- Washington, DC
- Westport
- Wilmington

Canada
- Burlington
- Calgary
- Edmonton
- Ottawa
- Montreal
- Quebec City
- London
- Toronto
- Vancouver
- Victoria

Europe
- Amsterdam
- Berlin
- Brussels
- Geneva
- Luxembourg
- London
- Milan
- Munich
- Paris
- Prague
- Stockholm
- Vienna
- Zurich

Middle East
- Abu Dhabi
- Dubai

Asia
- Bangkok
- Beijing
- Chiba
- Gurgaon
- Hong Kong
- Hsin-Chu
- Jakarta
- Kuala Lumpur
- Manila
- Mumbai
- Seoul
- Shanghai
- Singapore
- Taipei
- Tokyo

South Africa
- Cape Town
- Johannesburg
- Durban
- East London
- Port Elizabeth

Central and South America
- Brazil
- Buenos Aires
- Chile
- Colombia
- Costa Rica
- Mexico City
- Sao Paulo

Australia
- Adelaide
- Albury
- Brisbane
- Canberra
- Gold Coast
- Melbourne
- Newcastle
- Perth
- Sunshine Coast
- Sydney

New Zealand
- Auckland
- Christchurch
- Wellington

Macquarie Group achieved net profit and robust growth in 45 consecutive years since 1969

Key statistics

- Market capitalisation: US$18bn
- Total assets under management: US$370bn
- Credit rating: A3 (Moody’s)
- Employees: ~14,000
- Global locations: 65 offices in 28 countries

1. As at 30 September 2014
Infrastructure, Utilities and Renewables Overview

Who we are

Macquarie Capital is one of Macquarie Group’s six operating groups, with 36 offices in 21 countries.

The team is responsible for the Group’s corporate advisory and equity and debt capital markets activities.

In the year ended 31 March 2014, Macquarie Capital advised on...

450 transactions worth more than $US 83 billion

Infrastructure, Utilities and Renewables

Our Infrastructure, Utilities & Renewables team has been at the forefront of infrastructure finance and management globally for the past 20 years.

Advised on 69 infrastructure-related transactions worth more than $US 22 billion*

* Year ended 31 March 2014
Global Manager of Infrastructure Assets – Trusted By Communities

Every day ~100 million people use essential services provided by Macquarie managed businesses

- **AIRPORTS**
  ~ 97 million passengers per annum

- **ROADS**
  ~ 13 million vehicles per day

- **RAIL**
  ~ 3 million passengers per annum

- **FERRIES**
  ~ 6 million passengers per annum

- **SEA PORTS**
  ~ 4 million standard container units handled per annum

- **COMMUNICATIONS**
  ~ 76 million people through television, telephone and radio infrastructure

- **GAS**
  ~ 22 million households

- **WATER**
  ~ 4 million households

- **ELECTRICITY**
  ~ 2 million households

- **AGED CARE / RETIREMENT VILLAGES**
  ~ 3,250 beds

- **CAR PARKS**
  ~ 190,000 car spaces

- **EMPLOYEES**
  ~ 63,000 across the portfolio businesses

Note: Data as at 31 March 2014 or most recent.
Award Winning Infrastructure Platform

Latest awards

**House**
- Financial Adviser of the Year (2014)/Asia Pacific – IJ Global
- Best M&A House (2014)/Australia – Euromoney
- Best Domestic Equity House 2006-13 (2014)/Australia – Asiamoney
- Best Domestic Equity House (2012/13/14)/Australia – Asiamoney
- Best Investment Bank (2012/13)/Australia – Global Finance
- Capital Advisory Firm of the Year (2011/2012/2013)/Asia – PERE
- Best Investment Bank (2013)/Australia – M&A Advisor, The Asset
- Best M&A House (2013)/Australia – Capital CFO, FinanceAsia

**Transaction**
- Transport Deal of the Year (2014)/Global/Infrastructure Journal – Goethals Bridge Replacement
- PPP Deal of the Year (2013)/North America/Infrastructure Investor – Goethals Bridge Replacement
- Renewables Deal of the Year (2013)/Global/Infrastructure Journal – London Array OFTO acquisition
- M&A Deal of the Year (2013)/Australia/FinanceAsia – Future Fund’s acquisition of Australian Infrastructure Fund’s assets
- Social Infrastructure Deal of the Year (2013)/Global/Infrastructure Journal – Wiri Men’s Prison
- Infrastructure Acquisition of the Year (2013)/Global/Infrastructure Journal – Acquisition of UPP Group Holdings Limited by PGGM
- M&A Deal of the Year (2012)/Global/Project Finance International – Open Grid Europe acquisition from E.ON AG
- Deal of the Year (2012)/Europe/Euromoney – Open Grid Europe acquisition from E.ON AG
- Toll Road Deal of the Year (2012)/North America/Project Finance Magazine – Downtown Tunnel/Midtown Tunnel/MLK Extension
Growing Need for Infrastructure Investment
Asia Pacific’s growing prosperity is fuelling outsized infrastructure needs …

Projected GDP shares

Source: US Department of Agriculture
Abundant Infrastructure Funding
Debt – Global Infrastructure Investments

Continuing growths and leading infrastructure investments in Asia Pacific

Source: Infrastructure Journal
Equity – Infrastructure Funds Dry Powder

Growing unlisted infrastructure dry powder globally

Source: Preqin
Equity – Infrastructure Dry Powder in Asia

The growth trend in Asia is significant and pronounced
Financing Challenges in Emerging Markets
Investors’ Requirements

Even with robust need for infrastructure investment and abundant funding, the emerging market (“EM”) still face challenges due to the discrepancies between investor needs and PPP framework.

Key Requirements

- **Stable Political Environment**
  A stable political environment ensures the low default risk of the grantor in PPP projects.

- **Stable Economy with Growth Potential**
  Stronger economy generates higher investor return due to higher usage of the infrastructure facilities.

- **Open and Transparent and PPP Bid Process**
  A mature and transparent bid process gives investor confidence and comfort to invest.

- **Strong Risk Return Balance**
  Investors seek for a balance in the risk-return trade-offs in real assets investments.

- **Flexible and Clear Bid Rules**
  Sufficient clarity on bid rules avoids investor confusion and lowers investment risks.

- **Suitable Deal Structure**
  Investors have their own investment goal or focus, deals must be structured to target the available capital.

- **Stable Financial Market**
  As PPP projects in emerging markets are structured in local currencies, financial market stability helps to lower the FX risk for transaction.
Key Challenges in Emerging Markets

1. **Bid Processes**
   - Short timeline for bid preparation
   - Lack of sufficient pre-bid work by Grantors
   - High costs
   - Restrictive bid processes

2. **Bid Rules**
   - Lack of flexibility
   - Bid bonds
   - Lack of clarity

3. **Terms of Concession Agreement**
   - Risk transfer
   - Termination regime
   - Compensation
   - Deliverables

4. **Post Bid Processes**
   - Lack of certainty
   - Time slippage
   - Inability to cope with market changes

5. **FX Volatility**
   - FX risks between local currencies and global currencies

6. **Flexibility in Credentials**
   - Credentials of international bidders are not recognized

7. **Deal Selection**
   - PPP projects are not structured to fit investor appetites

8. **PPPs not panacea**
   - Not all projects is feasible under a PPP regime
   - Governments can monetise the ‘annuity stream’ to recycle capital

9. **Lack of organized national savings**
   - Emerging markets need to put more emphasis in developing national saving schemes
   - National saving schemes play a crucial role in attracting foreign capital
1 Key Challenge – Bid Processes

Short Timeline for Bid Preparation

- Bidders for PPP projects in EM countries often complain for the insufficient time to prepare bid proposal
  - Manila Bay Reclamation Project: One of the bidder Ayala Land argued there was insufficient time for challengers to submit proposal within 1 month after the submission of EOI
- Delayed response from authorities further shorten the time for preparation
  - It took 20 days for the Ministry of Finance in Jamaica to respond to a request for information regarding PPP arrangements. This left only two days to prepare before the report is due

Lack of Sufficient Pre-bid Work by Grantors

- Unclear PPP investment processes and timeline
- Grantors did not perform a feasibility study for the PPP projects
- Uncertainty around optimal commercial structure, including financing structure
- Uncertainty around government’s role and responsibilities in PPP projects

High Costs

- PPP projects often involve the engagement of different advisors such as technical advisors, market advisors etc. to prepare for the bid proposal
- The costs in engaging these advisors will only be fully or partially compensated for the final successful bidder
- Some markets might fully or partially reimburse the unsuccessful bidders for these costs but it is not common
- This results in higher costs for preparing the bid

Restrictive Bid Processes

- EM countries usually sets high pre-qualification for the bidders. For example:
  - The recent Philippine Airport Projects requires the operator to put in 10% of equity into the project. However, operators usually do not want to put in equity given the risk involved
- Grantors in EM countries can be overly prescriptive
Key Challenge – Bid Rules

Lack of Flexibility

- The PPP projects in EM countries generally lack flexibility in providing comments, adopting a change in consortium structure etc.
- For example, in Philippine, there is short timeframe for queries to the bid and bidders will be disqualified to provide mark-ups to the concession agreement after the querying period ends.
- The 2-stage evaluation from technical aspect to financial aspect results in technical aspects of the bid not being reflected into the financial aspect of the project.

Bid Bonds

- The bidder will usually issue a bid bond to the grantor, in hopes to guarantee that the winning bidder will undertake the contract under the terms at which they bid.
- The bid bond also serves to compensate the grantor for the time being devoted to negotiating with the preferred bidder in case they withdraw the bid.
- In EM countries, the bid bonds could be comparatively more expensive than the common market rate.

Lack of Clarity

- Overlapping calls among different ministries exist, resulting in unclear bid rules.
- Limited transparency around decision making and bid award.
# Key Challenge – Terms of Concession Agreement

<table>
<thead>
<tr>
<th>Risk Transfer</th>
<th>Land Acquisition Problems</th>
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<tbody>
<tr>
<td></td>
<td>For example, land acquisition in Indonesia is part of the government support but is also included in investment costs</td>
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<td></td>
<td>Private sector has to bear the cost of releasing the required land, as the land release process takes much longer than stated in the agreements</td>
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<table>
<thead>
<tr>
<th>Land Acquisition Problems</th>
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<tr>
<td>Governments change laws that affect the cost to the private sector of doing business without compensating private sector business</td>
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<tr>
<td>The private party generally cannot unilaterally increase its prices or diversify its business so as to offset the cost impact of the change in law</td>
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<table>
<thead>
<tr>
<th>Termination Regime</th>
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<tr>
<td>Debt Coverage</td>
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<tr>
<td>In the event of a breach in debt coverage ratio, there will usually be a grace period for the project company to do equity cure or a period of dividend lock up</td>
</tr>
<tr>
<td>Some EM countries do not provide this opportunity to fix the debt coverage ratio, instead they call for an event of default immediately</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hair Trigger Termination</th>
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<tr>
<td>EM countries often have concession agreements which permit the Government to terminate for any breach. Without any apparent test of seriousness, and without any period in which to rectify</td>
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<table>
<thead>
<tr>
<th>Compensation</th>
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<tr>
<td>Payment Risks</td>
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<tr>
<td>For example, the grantor will usually provide feed-in-tariff (FIT) to renewable energy concessionaires</td>
</tr>
<tr>
<td>In some EM countries, sometimes a lower FIT than what was agreed will be paid</td>
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<tr>
<th>Cash VS Non Cash</th>
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<tr>
<td>Compensation may be in the form of upfront cash, longer concession terms, higher tariffs or other non cash items – cash compensation will require clarity on counterparty credit risk but concession agreement obligations are typically unfunded by Governments and often not backed by relevant finance ministries</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Output VS Specification</th>
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</thead>
<tbody>
<tr>
<td>In some EM countries, it is a common problem that what the concessionaires built is not what the grantor wants, mainly due to the inadequacy in guidance or specification</td>
</tr>
<tr>
<td>As a result, the concessionaires will have to pay a penalty to the grantor</td>
</tr>
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</table>
Key Challenge – Post Bid Processes

Lack of Certainty and Time Slippage
- For example, most of the infrastructure projects in India suffer from delays in completion due to an inadequate regulatory framework and inefficiency in the approval process.
- Often Governments may procure PPP projects without completing the prerequisite land acquisition leading to delays and additional costs for the project.
- Infrastructure projects require multiple sequential clearances at various levels of government.
  - As an illustration, more than two years were needed for the Gujarat Pipavav port project to receive the necessary clearances after achieving financial closure. Moreover, most of the large projects involve dealing with various ministries.
- Often, the perspectives of the different ministries/departments vary and there is a large communication gap between central and local governments, leading to poor coordination in PPP project implementation.

Inability to Cope with Market Changes
- Environmental safeguards and guidelines have proven to be one of the major reasons for delay in post bid processes in infrastructure projects, especially in the power sector.
- While new projects need to comply with these regulations, even a project under construction may need to comply with revised standards midway through the execution stage.

Source: Observer Research Foundation
Volatility in global and EM currency exchange rates places challenges to investor yields and infrastructure funding from international investors.

Key Challenge – FX Volatility

- Raising global funding are usually USD/EUR/GBP denominated
- EM PPP projects are generally structured in local currencies
- FX volatilities could easily drive down yields substantially
- FX hedging products incur costs and hedging for certain EM currencies are not available
- FX volatility hinders funding and investment to EM PPP Projects

Source: Bloomberg
Key Challenge – Flexibility in Credentials

EM lacks flexibility in recognising credentials of global infrastructure players

Example – Macquarie Infrastructure and Real Assets (MIRA) is a Global Airport Operator

However...

- Many bid rules in EM countries do not recognize MIRA as an operator
- The lack of flexibility in recognizing credentials of global infrastructure player reduces the amount of investors and operators in the PPP markets of different EM countries
- EM countries must learn to understand the capabilities and the credentials of international players and develop the ability to change local rules to meet the international conditions for a more mature PPP financing market

Top 5 Global Airport Investor / Operator

Raised c.$A62 billion of financing for airport transactions

Manages more than 97 million of passengers p.a.

- Denmark — Copenhagen Airports
- Belgium — Brussels Airport
- India — GMR Airports (Delhi and Hyderated Airports)
- Australia — Hobart International Airport
7 Key Challenge – Deal Selection

Equity investors seek different opportunities, roles and return profiles

Most investors prefer operating assets, particularly in transport

**Asia & Pacific Dry Powder Distribution**

![Graph showing USD million for different sectors: Power, Renewables, Transport, Water.]

- Secondary market
- Primary market
- Refinancing

PPP projects in EM should be structured to target the available capital instead of just what the country needs.

Most EM deals are in power and transport. However, due to patronage risk, most investors shy away from primary market transport deals.

Different Types of Equity Investors Seek Different Sectors and Markets

![Graph showing USD million for different sectors and markets: Primary Market, Secondary Market, Refinancing.]

- Industrial investor
- Financial investor
- Gov. Agency / SWFs / ECAs / DFIs

Source: Infrastructure Journal
Governments can consider monetising infrastructure cash flows whilst maintaining ownership to free up capital to invest into projects that can never work as PPPs

Recycling capital

- Governments in emerging markets need to look more closely at equity recycling for those projects that can never work as PPPs
- In state owned assets, Governments hold in their hands valuable stable cash flows that private investors will pay a premium for
- If these cash flows, not necessarily the assets themselves – are partially sold to private investors, Governments will be able to receive a premium
- Governments are able to earmark specific projects, or Government sponsored infrastructure funds, to recycle this capital into
- This is currently happening in Australia – such as the Port Botany 99 year lease, where the proceeds were invested into the NSW Infrastructure Fund (Restart NSW)
- The Philippines did this very successfully some years ago
Key Challenge – Lack of organized national savings

Historically, there has been a lack of properly organized national savings plans in many emerging markets, this has impacted the ability to attract foreign investment.

Lack of organized national savings

- The emphasis on attracting capital to emerging markets infrastructure has been too piecemeal
- The challenge needs to be looked at in holistic manner
- One of the great impediments has been too little emphasis on policies that develop pension funds and other means of organized national savings
- In countries such as South Korea and Australia, pension and sovereign wealth funds have played a pivotal role in attracting other foreign capital into the infrastructure sector
- In emerging markets, Governments need to give this idea more attention – in countries where there are national savings pools, there should be a requirement to invest in local infrastructure
- National savings pools need to become “leaders for foreign capital”
A New Idea: The “Gold Standard”
A New Idea - The Gold Standard for infrastructure projects in emerging markets

The implementation of this idea will require the myriad of participates in the private sector to agree what conditions ideally need to be met for their capital to go to Greenfield projects

The Gold Standard

• The new Global Infrastructure Hub recently agreed by the G20 would be an ideal facilitator for preparation of this standard

1. Private sector financial and strategic players can take the initiative and create a very specific standard for projects and guarantee project delivery if that standard is met. This may include ADB, IFC, World Bank and the new Asian Infrastructure Investment Bank (AIIB)

2. This clarity is needed for Governments at all levels to understand the needs of private players

3. This will be the private sector’s standard under which it is prepared to invest

4. It will be offered to Governments irrespective of what their individual PPP rules may be

5. It will clearly outline what Governments very specifically need to do to attract investment into individual projects

6. If Governments at local, provincial or national levels can comply with the standard they will get funding. It will be take it or leave it – hence a great opportunity for Governments to compete for available capital in terms of their policies
APPENDIX

Pipeline PPP Projects in Emerging Markets
PPPs have been used in sectors such as transportation, energy and telecommunications

### Mass transit systems

- **BTS SkyTrain**: THB52bn (USD1.63bn) concession awarded by the Bangkok Metropolitan Authority (BMA) to the Bangkok Transit System Corporation (a subsidiary of Tanayong PCL Real Estate)
  - 30 year BOT turnkey contract with a fixed price, delivery date and guaranteed performance criteria
  - Comprises 2 elevated electrified transit lines of more than 24km
  - Became operational in 1999 and was the only mass transit concession out of 3 granted by BMA in Metropolitan Bangkok in the decade
- **Mass Rapid Transit (MRT) metro subway**: Project comprises a 20km underground metro line running from Hua Lamphong to Bang Sue
  - Implemented on a DBOM basis at a cost of THB126bn (USD3.97bn) and commenced operation in 2004
  - The private sector concessionaire, Bangkok Metro Company Limited, was selected by the Mass Rapid Transit Authority of Thailand (MRTA) to finance the rolling stock of trains and equipment and to operate the line
  - Majority of the project was funded by the Government using bonds, commercial loans and soft loans
  - Passenger numbers have been smaller than originally forecasted and have not been helped by the lack of integration with the bus network

### Toll roads / Expressways

- **Don Muang Tollway**: THB12bn (USD377m) project for a 28km 6-lane elevated toll road from central Bangkok to the old Don Muang International Airport north of Bangkok
  - 25 year DBOM concession awarded in 1989 by the DOH to the Don Muang Tollway Company Limited, a consortium comprising Dywidag (German led consortium), Delta Construction (Thai construction Company) and GMI (French Company)
  - A 7km extension to the expressway was agreed in 1994
- **Second Stage Si Rat Expressway**: THB48bn (USD1.51bn) project consisting of four sections around Bangkok and urban areas totaling ~37km
  - Concession awarded in 1998 to the Bangkok Expressway Consortium (which later became the Bangkok Expressway Company Limited (BECL) on BOT basis for 30 years
  - Construction took 3 years and the expressway was first operational in 1993

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*Source: NESDB, Allen & Ovary*
India – Growing PPP Projects

India is set to continue promoting PPP models to fulfill its infrastructure investment targets.

**Overview**

- According to the World Bank, India is second only to China in terms of the number of public private partnership (PPP) projects.
  - Encouragingly, the government is set to continue promoting PPP models to help achieve its investment targets.
- During the 12th Five-Year Plan, the Planning Commission targets to achieve 47% of total infrastructure investments through private funding, up from 25% in the 10th Five-Year Plan.
- Projected infrastructure spending in the 12th plan is USD1,011bn.
- The Ministry of Roads and Highways of India has undertaken 68 projects for a total value of USD2.6bn through PPPs.
  - 34 out of these have been completed.
- The Power sector accounts for nearly 18% of total PPP value, with 56 projects accounting for a total value of USD12.6bn.

**Rising Private Investment Outlay**

<table>
<thead>
<tr>
<th>Plan</th>
<th>Private</th>
<th>Public</th>
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<tbody>
<tr>
<td>10th Plan</td>
<td>25</td>
<td>75</td>
</tr>
<tr>
<td>11th Plan</td>
<td>35</td>
<td>65</td>
</tr>
<tr>
<td>12th Plan</td>
<td>47</td>
<td>53</td>
</tr>
</tbody>
</table>

**Delicensing**

- Foreign Direct Investment (FDI) of up to 100% under the automatic route as well as technology collaboration is allowed freely for Infrastructure projects.

**Encouragement of Infrastructure Debt Funds (IDFs)**

- The Government of India set up the India Infrastructure Finance Company (IIFCL) to provide long-term funding for infrastructure projects.
- Interest payments on borrowings for infrastructure are subject to lower withholding tax rate of 5%, down from a tax rate of 20%.
- IDF’s income is exempt from tax.

**Special Economic Zones (SEZs)**

- The government has granted sops, including a large number of SEZs, to the capital goods and real estate industries.
  - Specific impetus to increase exports.

**Issue of tax-free infrastructure bonds**

- Infrastructure finance companies like India Infrastructure Finance Corporation (IIFCL), National Highways Authority of India (NHAI), Housing and Urban Development Corp (Hudco), Power Finance Corporation (PFC) and Indian Railway Finance Corporation (IRFC) are allowed to issue tax-free bonds.
- Due to this, companies raised about USD5.5bn in FY12 and are estimated to have raised about USD4.6bn during FY13.

Source: IBEF
### Malaysia – Recent and Upcoming PPP Projects

The 11th Malaysia Plan will be announced in June 2015

<table>
<thead>
<tr>
<th>Sector</th>
<th>Recent / Upcoming Projects (based on 10th Malaysia Plan 2011 – 2015)</th>
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<tbody>
<tr>
<td>Roads</td>
<td>Seven highway projects amounting to an estimated USD5.9bn, including:</td>
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<tr>
<td></td>
<td>— West Coast Expressway</td>
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<td></td>
<td>— Guthrie- Damansara Expressway</td>
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<td></td>
<td>— Sungai Juru Expressway</td>
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<td></td>
<td>— Paroi- Senawang - KLIA Expressway</td>
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<tr>
<td></td>
<td>— Ampang - Cheras - Pandan Elevated Highway</td>
</tr>
<tr>
<td>Rail and Transport</td>
<td>— Integrated Transport Terminal in Gombak, Selangor</td>
</tr>
<tr>
<td></td>
<td>— Mass Rapid Transit (MRT) project in Greater Kuala Lumpur (USD12.4bn)</td>
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<td></td>
<td>— Kuala Lumpur – Singapore High Speed Rail of 400km (USD5.8bn – currently in feasibility stage)</td>
</tr>
<tr>
<td></td>
<td>— East Coast Rail Route (USD9bn – currently in feasibility stage)</td>
</tr>
<tr>
<td>Power</td>
<td>— Two coal electricity generation plants (USD2.2bn)</td>
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<td></td>
<td>— 300-megawatt Combined-Cycle Gas Power Plant in Kimanis, Sabah (USD0.5bn)</td>
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<td></td>
<td>— Construction of the liquefied natural gas regasification by Petronas in Melaka (USD0.9bn)</td>
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<tr>
<td>Education</td>
<td>— Perdana University, a joint venture between Academic Medical Centre Sdn Bhd and John Hopkins Medicine International as well as Royal College of Surgeons Ireland (USD0.6bn)</td>
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<td></td>
<td>— Five Universiti Teknologi MARA (UITM) branch campuses</td>
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<tr>
<td></td>
<td>— International Islamic University Malaysia Teaching Hospital in Kuantan (USD0.13bn)</td>
</tr>
<tr>
<td>Port</td>
<td>— Privatization of Penang Port Sdn Bhd</td>
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<tr>
<td>Others</td>
<td>— Development of Malaysian Rubber Board’s 3,300 acre land in Sungai Buloh, Selangor (USD3.1bn)</td>
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<td>— Redevelopment of the Angkasapuri Complex Kuala Lumpur as Media City</td>
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<td></td>
<td>— Kuala Lumpur Strategic Development by 1MDB; Sungai Besi Airport area</td>
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<td></td>
<td>— KL International Financial District in Kuala Lumpur (USD8bn)</td>
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<tr>
<td></td>
<td>— Two aluminium smelters in Sarawak Corridor of Renewable Energy (SCORE)</td>
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</tbody>
</table>

Source: Press (PwC Report September 2012)
### Vietnam – Selected PPP Pipeline Projects

<table>
<thead>
<tr>
<th>Roads</th>
<th>Description</th>
<th>Timeline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ninh Binh- Thanh Hoa Highway (Priority)</td>
<td>About 126.7km long with 6 lanes, the road passes Ninh Binh, Nam Dinh and Thanh Hoa provinces, with a total investment is USD1.86bn; the World Bank is working on procedures for securing the funding from the Public Private Infrastructure Advisory Fund (PPIAF) for the Ninh Binh- Thanh Hoa bai Vot Highway Project as a PPP</td>
<td>NA</td>
</tr>
<tr>
<td>Ben Luc- Hop Phuoc Highway (Priority)</td>
<td>This is an urban highway, with designed speed of 80-100 km/h, around 25km long with four to six lanes, with an investment of USD713m; the road connects Long An province and Ho Chi Minh City</td>
<td>NA</td>
</tr>
<tr>
<td>Ho Chi Minh Highway, Cam Lo- La Son section</td>
<td>‘B’ category highway, with designed speed of 80 km/h, about 102km long with four lanes, with an investment of USD1.09bn and is located in Quang Tri and Thua Thien Hue provinces</td>
<td>NA</td>
</tr>
<tr>
<td>Ngoc Hoi bridge and approach ramps</td>
<td>The bridge will connect the Thanh Tri and Gia Lam districts, 5km in length, with an investment of ~USD475m; the project is in the Hanoi Capital Construction Master Plan</td>
<td>NA</td>
</tr>
<tr>
<td>Extension of National Road No 22 (trans- Asia road)</td>
<td>The road goes through District 12, Hoc Mon, Cu Chi of HCMC, 20km long with four lanes, with an investment of USD610m; estimated construction period is 4 years, expected to be completed by 2017, with operations spread over 30 years</td>
<td>Expected Completion of Construction: 2017</td>
</tr>
</tbody>
</table>

### Railways

| Ben Thanh Central Station Project          | A multifunctional rail terminal project, supported by the Japan International Cooperation Agency                                                                                                            | NA                                           |
| Ho Chi Minh Metro Project (No 1)          | A metro project, which has already invited bids                                                                                                                                                   | Expected Completion of Construction: 2018 |

### Airports

| Long Thanh International Airport Phase I (Priority) | Greenfield project with estimated 25 million passengers annually, located in the Dong Nai province; the investment for the project is USd1.4bn                                                                 | Expected to become operational: 2020 |

### Ports

| Son Tay Port located in Son Tay district    | 0.5-1.0 hectare- wide port located in Hanoi, with an investment of about USD19m                                                                                                                        | NA                                           |
| Hong Van Port located in Thuong Tin district | 1.0-1.5 hectare- wide port located in Hanoi, with an investment of about USD14m                                                                                                                       | NA                                           |
| Khuyen Luong Port                          | 1.5-2.0 hectare- wide port located in Hanoi, with an investment of about USD24m                                                                                                                                 | NA                                           |

Source: Infrastructure Journal, Jan 2012
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