Overcoming Smart City Challenges:
The Role of International Financial Institutions

Thomas Maier Taipei, 29 March 2018

- 1. "SMART CITY" DEFINITION
- 2. "SMART CITY" IMPORTANCE OF EMERGING MARKETS
- 3. "SMART "CITY" INSTITUTIONAL & REGULATORY CHALLENGES
- 4. Main International and Regional Financial Institutions
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# "Smart City" Definition

"Smart City" is an integrated concept to enhance competitiveness and quality of life by applying real-time urban data analytics using the Internet of Things (IoT) and other data driven solutions to improve the efficiency, reliability and quality of urban infrastructure and associated public services for users.

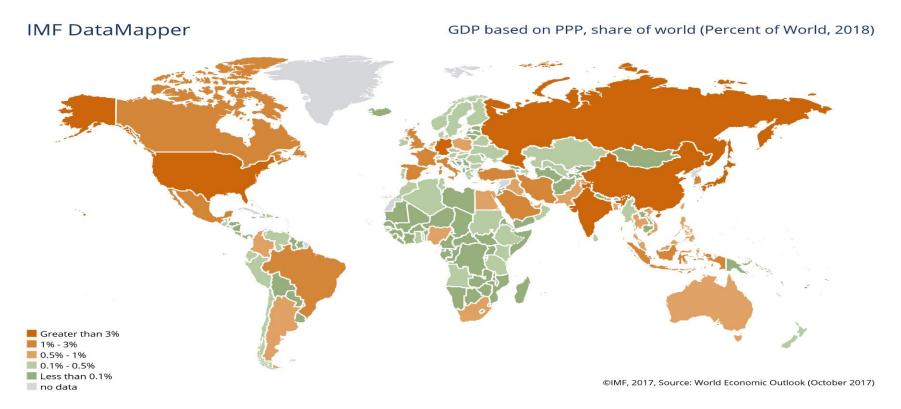


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# "Smart City" Importance of Emerging Markets

# **Emerging Markets:**

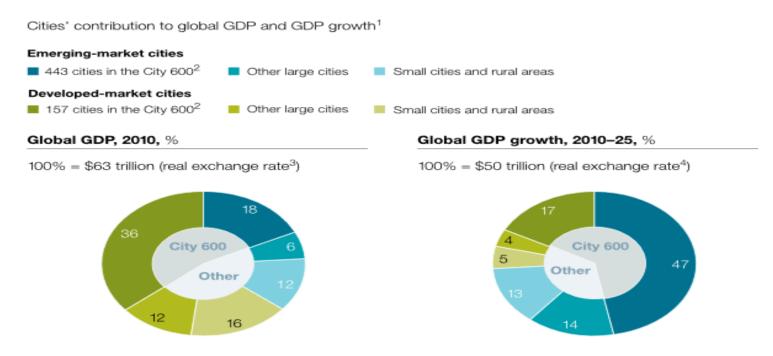
- 60% of World GDP (EU 16,2%), USA (15,1%)
- 80% of global GDP growth



Source: McKinsey City Scope 5

# "Smart City" Importance of Emerging Markets

- Emerging market cities account for 50% of global GDP growth
- Cities will need to spend 10 trillion USD in physical capital by 2025
- Physical investments need to be combined with smart city approaches to deliver quality of life and green solutions



<sup>&</sup>lt;sup>1</sup>2,600+ cities, including large cities as well as smaller cities and rural areas.

Source: McKinsey Global Institute Cityscope 2.0

Source: McKinsey City Scope 6

<sup>&</sup>lt;sup>2</sup>The top 600 cities by their contribution to global GDP growth 2010-25.

<sup>&</sup>lt;sup>3</sup>Reflects market exchange rate.

<sup>&</sup>lt;sup>4</sup>Prediction based on differences in per capita GDP growth rates of countries relative to the growth of US per capita GDP.

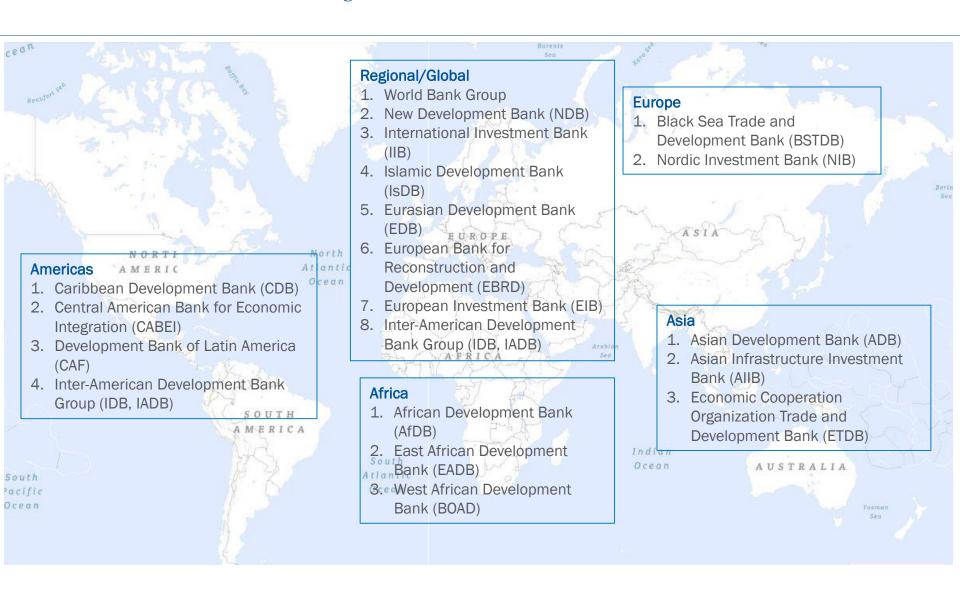
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# "Smart City" Institutional & Regulatory Challenges

- I. Emerging Market Cities need to implement "Smart City" solutions but most cities have only vague notions regarding:
  - Policy frameworks for data sourcing and management
  - Institutional arrangements for "Smart City" activities
  - Cost-benefit aspects of "Smart City" investments
- II. Cities need guidance and implementation support on:
  - Definition of a "Smart City" strategy
  - Priority setting and coherent planning/realisation of investments
  - Promotion of "Smart City" concepts to stakeholders and citizens
  - Development of credible data sharing & management policies
- III. International Financial Institutions can provide necessary support through:
  - Technical assistance for "Smart City" planning/realisation
  - Financing of investments in higher risk countries/cities

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# Main International and Regional Financial Institutions



# Best practice IFIs

- Provide technical assistance to public sector counterparts in developing and implementing "Smart City" solutions
- Mobilise private sector expertise in designing and implementing solutions
- Provide long-term financing to deliver investments
- Crowd in private finance and expertise through risk-mitigation schemes
- Ensure transparent and life-cycle based procurement solutions without eligibility restrictions

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# Taiwanese contribution to EBRD's business model is solid and important

## INVESTMENTS (AS OF YTD 2017)

- Taiwanese FDI is an important source of FDI
- Joint Taiwanese-EBRD investment stood at EUR 1.46 billion, of which 20% Taiwanese.
- Major beneficiary countries: Russia (66%), Kazakhstan (8%), Romania (7%)
- Major sectors Financial Institutions (63%) and Industry/ Commerce/ Agribusiness (36%)

In 2017, 26 contracts worth over EUR 0.9 million awarded\*

**CONSULTANCY AND PROCUREMENT** 

#### TRADE FACILITATION PROGRAMME

- Launched in 1999, since then financed over 18,300 transactions for more than EUR 12.8 billion.
- 101 export and import transactions with Taiwanese companies, totalling EUR30.2 million
- 12 Taiwanese Confirming Banks (as of January 2017)

TAIWANESE
CONTRIBUTION TO
EBRD

- Since 1991 around EUR 36.5 million donor funds for technical cooperation projects
- Founding contributors of ETC fund
- Contribution to E5P Fund and the Small Business Impact Fund (SBIF) (USD 900,000 total)
- USD 60 million channelled through EBRD's Financial Intermediary and Private Enterprises Investment Special Fund to partner lending institutions

TECHNICAL COOPERATION

\*unaudited

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# EBRD Initial "Smart City" Focus by Activity

- Green/ energy efficient buildings with iBEMS
- Urban traffic control centres
- Integrated transport concepts, including smart cards and other e-ticket solutions
- Integrated emergency response systems
- Smart ubiquitous public libraries
- Electronic tolling and value added real time traffic information via app and internet
- Parking management and control
- LED street lighting with integrated add-on solutions
- Smart and integrated fleet management for public and private sectors
- Smart street cleaning and sanitation
- Bicycle sharing systems

# Delivering "Smart City": Approach by EBRD

- Development of a "Smart City" Strategy (SCS)
  - Helping clients to define priority SCS investment areas. There is no "one size fits all" because cities have different development needs, financial and planning frameworks, data privacy levels, political ambitions.
  - Practical way forward is to use a bottom up approach to create stakeholder and citizens' involvement and to create a plan that is owned by a majority
- Establishment of a "Smart City" open data platform
  - Supporting cities in the development of data platforms, based on real time loT
- Design and finance of "Smart City" building blocks
  - Mobilisation of consultants' support to assist cities in developing projects and provision of long term finance to implement these projects.

# "Smart" can be "Green": Illustration from Public Transport Sector

- "Smart" solutions can be used as a means to achieve 'green' outcomes. There are numerous projects that can be both 'smart and green'
- However, definitions are important: the term "Smart City" has too often been broadly, and often, confusingly defined as a 'catch-all' label for any urban investment that is variously technology-led, but also covering "sustainability", "citizen well-being," and the green agenda
- The example below clarifies how "smart" and "green" projects can be distinguished, and when they are both smart and green:

# **Urban Bus Project Example**

## **Smart City Project**

A Smart City Strategy is adopted, and investment is made to produce real-time fleet management, Automated Fare Cards enhance operations, maintenance, service quality efficiently

When the same project does both, it is a 'hybrid' 'Green and Smart' Project

## **Green City Project**

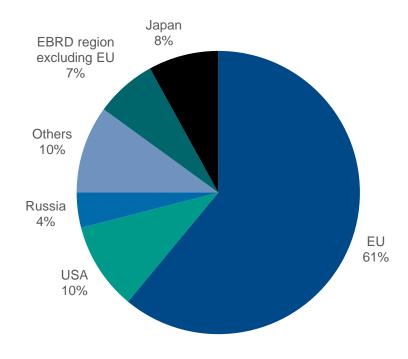
Green City Action
Plan is adopted, and
investment is made
in low-carbon bus
(hybrid, electric)
fleet.

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# The EBRD is an international, AAA-rated financial institution, which promotes transition to market economies

## SHAREHOLDING STRUCTURE

The EBRD has a triple-A rating from all three main rating agencies (S&P, Moody's and Fitch)



- (1) Includes European Community and European Investment Bank (EIB) Among other EU countries: France, Germany, Italy, and the UK each holds 8.6%
- (2) Russia at 4%

- EBRD is an international financial institution that promotes transition to market economies
- Owned by 66 countries and 2 inter-governmental institutions (EU, EIB)
- Recent "new" countries: 2016 Lebanon,
   2017 West Bank and Gaza
- Since 2015, PRC is shareholder
- Capital base of around EUR 41 billion
- Strong local office network with >45 offices throughout the EBRD region
- Matrix organisation combining sector expertise and country leverage

# Sector coverage and EBRD approach

## EBRD Sectors



Manufacturing & Services



**Municipal & Environmental** Infrastructure



**Transport** 



**Financial Institutions Natural Resources** 





Telecommunications. Informatics & Media



**Property & Tourism** 



**Power & Energy** 

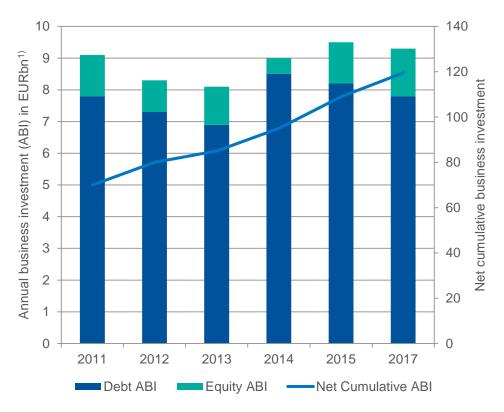


**Industry, Commerce** & Agribusiness

- FBRD invested over FUR 119 billion in over 5000 projects since 1991.
- Loan, equity and guarantees for wellstructured, financially robust projects of all sizes (incl. many small businesses).
- Close policy dialogue with governments, civil society and other stakeholders.
- Targeted technical assistance for project preparation.
- Focus on working with the private sector to foster innovation and openmarket economies.

# In 2017, EBRD invested a total of EUR 9.6 billion in 412 projects

## ANNUAL BANK INVESTMENT<sup>1)</sup> 2011-2017

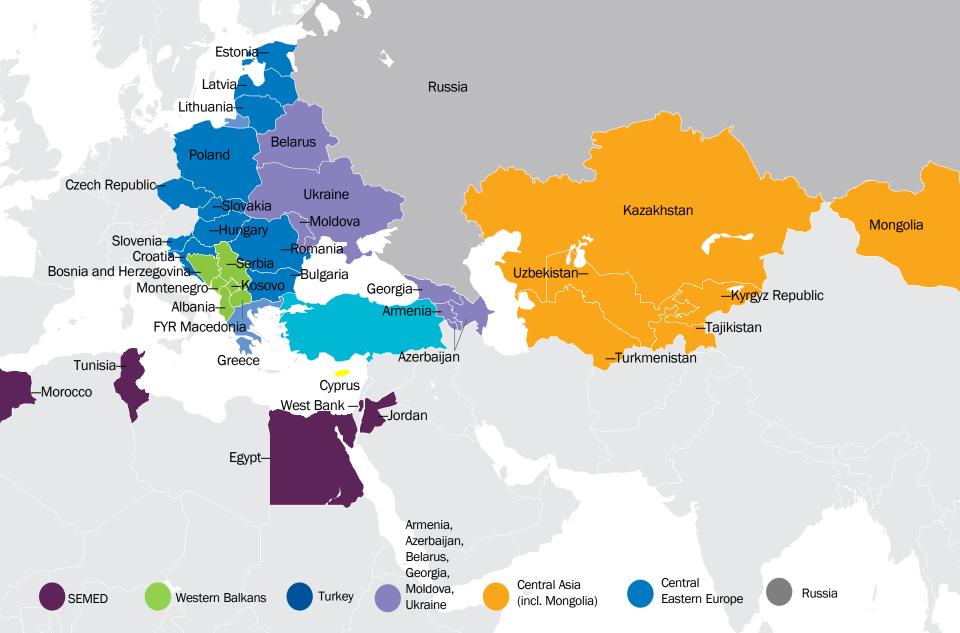


## 2017 INVESTMENTS:

- Debt 81,3%, Equity 16% and Guarantee 4,7%.
- Net profit for 2017 at EUR 0.8 billion.
- Local currency: Kazah Tenge, Turkish Lira, etc.
- Direct investments and via holding companies.
- Amid economic and political turbulence, EBRD remains a strong, resilient and trusted partner.

<sup>(1)</sup> Annual Bank investment (ABI) is the volume of commitments made by the Bank during the year

# EBRD country coverage



# EBRD Countries of Operations offer a great potential for international expansion







GDP: ca. USD 215 billion





# Fundamentals of EBRD region

# EBRD covers a region of **500 million people** with a combined GDP of **EUR 3 trillion**.



**Total Population: 110m** 

Average 2015/2016F GDP

change: 2.7% / 3%

EBRD portfolio: EUR 8.4 bn.

EBRD Infra portfolio growth

2013-2015: -5%



**Total Population: 68m** 

Average 2015 / 2016F GDP

change: 2.8% / 3.1%

EBRD portfolio: EUR 4.1 bn.

EBRD Infra portfolio growth

2013-2015: 43%



**Total Population: 152m** 

Average 2015 / 2016F

GDP change: 3% / 2.9%

EBRD portfolio: EUR 5 bn.

EBRD Infra portfolio growth

2013-2015: 418%



**Total Population: 79m** 

2015 / 2016FGDP change:

4% / 3.1%

EBRD portfolio: EUR 7.2 bn.

EBRD Infra portfolio growth 2013-2015: 86%

# Fundamentals of EBRD region

# EBRD total portfolio and Infra portfolio amounts to EUR 40 billion and EUR 10 billion



**Total Population: 44.4m** 

Average 2015/2016F GDP

change: 2.9% / 3.3%

EBRD portfolio: EUR 4.9 bn.

EBRD Infra portfolio growth

2013-2015: -10%



**Total Population: 78.5m** 

Average 2015 / 2016F

GDP change: -1.2% / -0.3%

EBRD portfolio: EUR 7.2 bn.

EBRD Infra portfolio growth

2013-2015: 21%



**Total Population: 13m** 

Average 2015 / 2016 F GDP change: -0.1% / 0%

EBRD portfolio: EUR 1.3 bn.

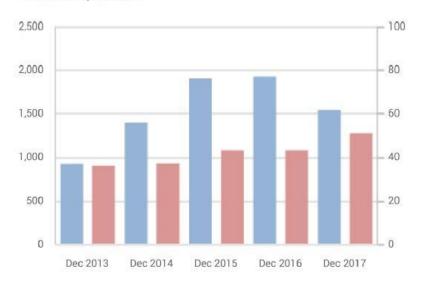
EBRD Infra portfolio growth 2014-2015: 326%

# In 2017 EBRD invested EUR 9.6 billion in more than 400 projects

## ANNUAL BANK INVESTMENT<sup>1)</sup>

# Annual Bank Investment and Operations

€ million at reported rates



(1) Annual Bank investment (ABI) is the volume of commitments made by
the Bank during the year. Unreconciled data.

2017 (AS OF 31 DEC)					
Number of projects YTD	412				
Annual Bank Investment	EUR 9.7 bn				
Annual Mobilised Investment	EUR 1.0 bn				
Portfolio	EUR 41.4 bn				
Operating assets	EUR 28.7 bn				
Private share of portfolio	66%				

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# Turkey is one of EBRD's key countries of operation

## EBRD TOP 5 COUNTRIES (IN EUR MILLION)

	2016		2017
1 ROMANIA	1,597	1 TUKEY	1,540
2 TURKEY	1,434	2 EGYPT	1,413
3 RUSSIAN FEDERATION	522	3 POLAND	659
4 BOSNIA AND HERZEGOVINA	447	4 GREECE	614
5 UKRAINE	431	5 KAZAKHSTAN	586

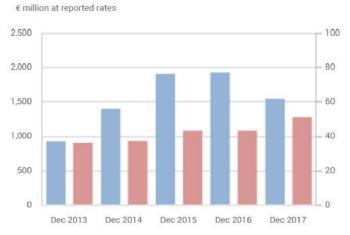
## **TURKEY AND EBRD**

- Despite challenging economic and political situation, Turkey received the highest amounts of EBRD financing in 2017
- In 2017, EBRD invested EUR 1.54bn (ca. 21% of total EBRD investment) across 51 projects.
- For 2018, GDP growth is expected to be moderate (ca. 0.5%); latest growth remains at 1.2%
- EBRD remains committed to investing in Turkey.

# EBRD remains committed in investing in Turkey with a diversified pipeline

## **EBRD** AND TURKEY IN NUMBERS

## Annual Bank Investment and Operations



Annual	Activity
--------	----------

Number of projects YTD	51
Annual Bank Investment	EUR 1,540m
Annual Mobilised Investment	EUR 207m

#### Portfolio & Operating Assets

Portfolio & Operating Assets	
Portfolio	EUR 7,279m
Active portfolio projects	230
Operating assets	EUR 5,963m
Private share of portfolio	97%
Equity share of portfolio	15%

## Strong EBRD pipeline and portfolio:

- 97% private deals, also in the investment pipeline
- Strong transition impact score above EBRD average
- High share of local currency / capital market (33% of total) and small business deals (21% of total)
- Strong GET impact of 51% of total signed financing
- High amount of gender deals
- Well diversified annual business

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# The Green Energy Special Fund (GESF) helps fostering best practices for resource efficient projects

## **GESF IN A BRIEF**

EBRD and TaiwanICDF created a USD 80 million GESF in order to:

- Address the affordability gap currently preventing clients from choosing best available technology
- Expand climate change mitigation investments and develop appropriate competencies in adaptation
- Facilitate competitive entry of lowcarbon players
- Build up a critical mass and awareness of energy efficient and lowcarbon technology projects
- Foster the diffusion of new technologies until they reach full market potential and become the common choice

## HOW IT WORKS AND OUTCOME

- GESF provides a subsidised interest rate relative to a reference market rate, where net present value of the accumulated interest rate subsidy shall be equal to the estimated value of monetised environmental benefits
- First sponsored project for LED street lighting project signed in Chisinau, Moldova in December 2011.
- Investments are being considered in Bosnia and Herzegovina, Moldova, Bulgaria, Jordan, Kazakhstan and Morocco under consideration.

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## Public Procurement Statistics in 2016

206 contracts totaling:

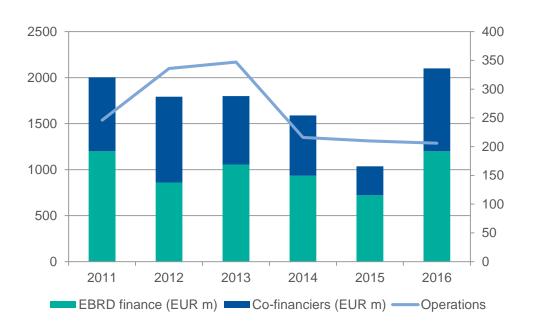
EUR 2.1 billion

EBRD financed: EUR 1.2 billion

Open tendering share:

Average contract: EUR 20.4 million

## PUBLIC PROCUREMENT CONTRACTS SIGNED



The Bank's public sector clients are expected to sign

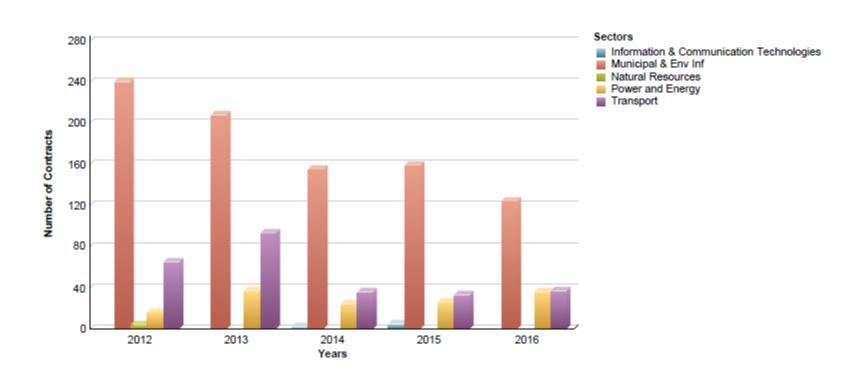
EUR 7.5 billion

and 850 contacts

in the next four years

# Public Procurement statistics in 2016

## INFRASTRUCTURE IS THE SECTOR WITH THE HIGHEST CONTRACTUAL ACTIVITY



# EBRD procurement & opportunities for Taiwanese companies

#### **EBRD PROCUREMENT PRINCIPLES**

- Aligned with the Government Procurement agreement of the WTO
- Use of efficient procurement methods
- Fair and open international tendering the norm
- No country eligibility limitations or preferences
- Clients are responsible for project implementation and tendering
- Compliance with the Bank's Environmental and Social Policies
- Prevention and fighting of prohibited practices

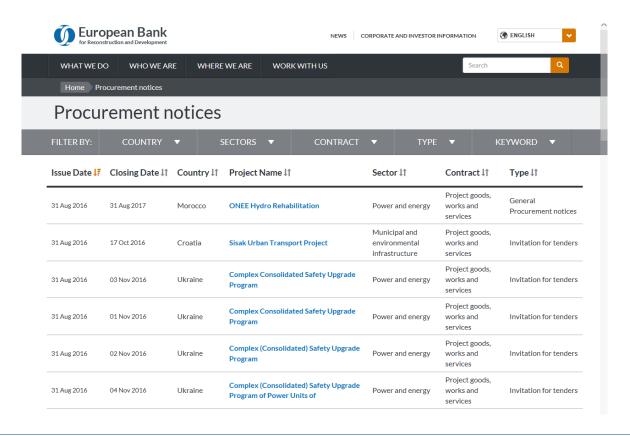
## EBRD APPROACH IN PUBLIC PROCUREMENT

- Minimisation of risks Maximisation of success
- Procurement part of project delivery strategy
- Use of standard tender documents and internationally recognised contract terms and conditions
- Aim of evaluation best value for money
- Evaluation factors usually are expressed in monetary terms
- Prevention and fighting corruption

# EBRD procurement & opportunities for Taiwanese companies II

Where to find information on the opportunities? <a href="http://www.ebrd.com/work-with-us/procurement.html">http://www.ebrd.com/work-with-us/procurement.html</a>

What to look for: Project Pipeline; General Procurement Notices; Invitation for Prequalification or for Tender and Invitation for Expression of Interest (Consultants)



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# Contacts

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