

POTENTIAL RES SUPPORT SCHEMES IN UKRAINE: INTERNATIONAL EXPERIENCE OF AUCTIONS

- WHAT MODEL WOULD WORK FOR UKRAINE -



IFC

**International
Finance Corporation**
WORLD BANK GROUP

*March 17th, 2017
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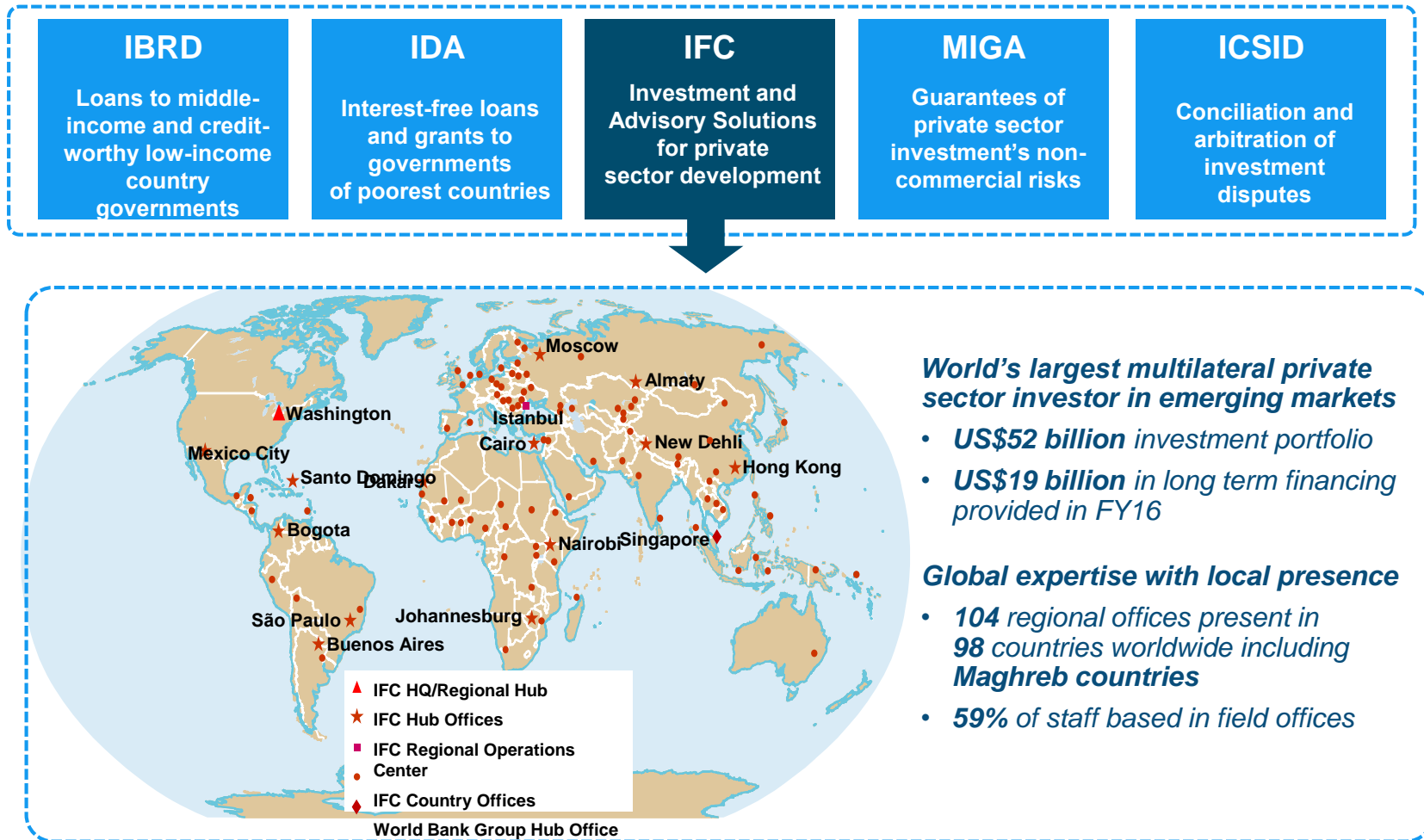
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IFC and the World Bank Group

IFC - A Member of the World Bank Group

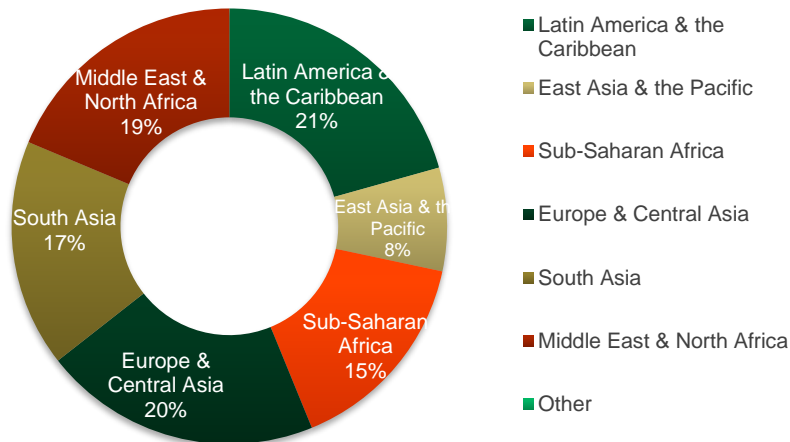
IFC is the private sector arm of the World Bank Group which comprises five agencies



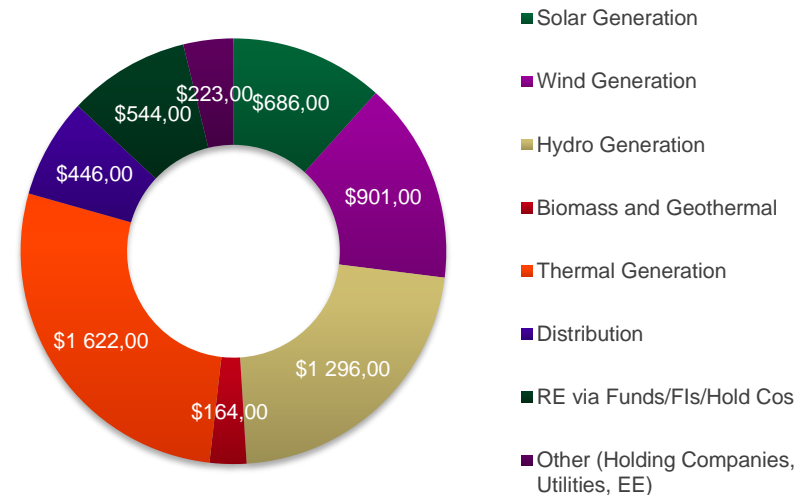
IFC Power Investments

20% invested in ECA and 2/3 rd of US\$ 5.8 Bn Power Portfolio invested in Renewable energy

Power Portfolio by Region



Power Portfolio by Technology



2

Industry Trends

Industry Trends

Renewable Energies are established

Policy

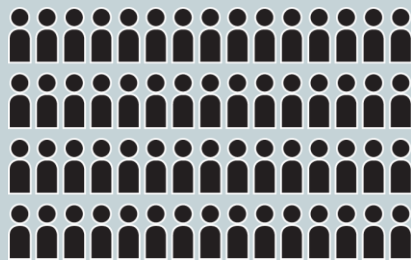


138 countries
have policy targets for
renewable energy

Market Share



54%
of total capacity installed
in 2105 is renewables
excluding hydro



60 million jobs
could be created by
renewable energy



releases many times less
GHGs than conventional
energy sources

Jobs

Emissions



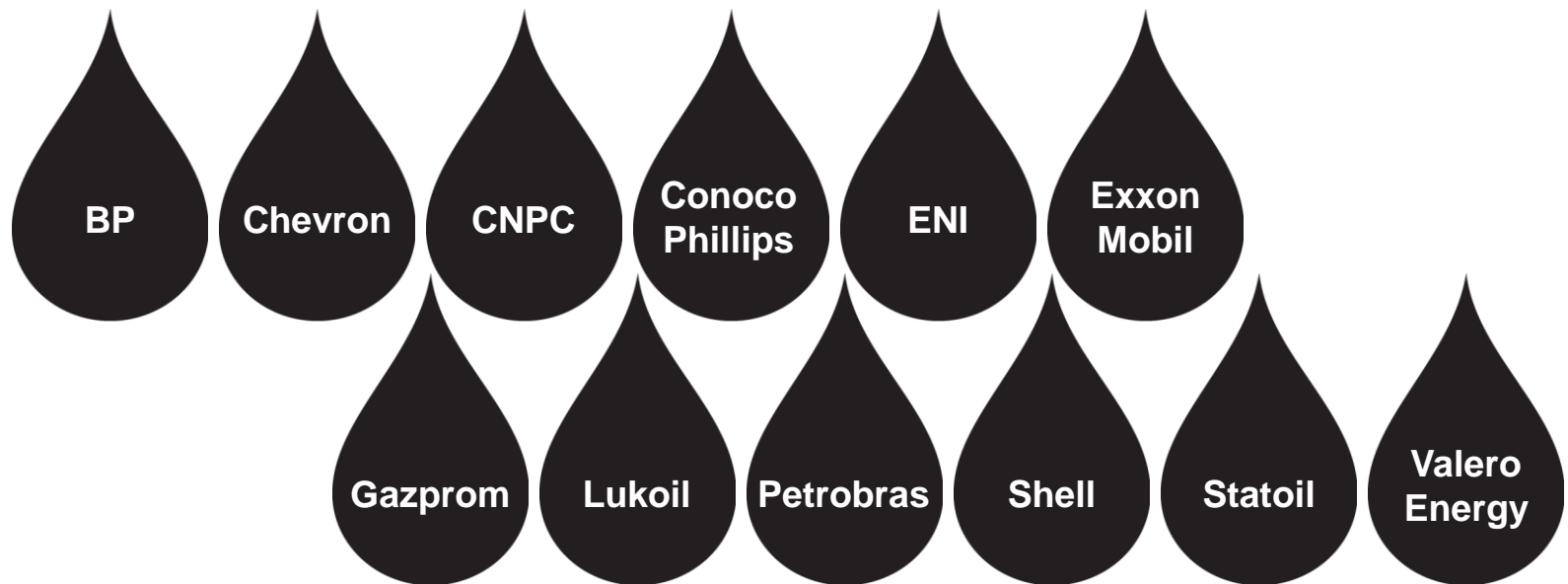
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Source: Renewables
2016, Global Status
Report, REN21, IPCC

Industry Trends

Most of O&G majors are investing in RE



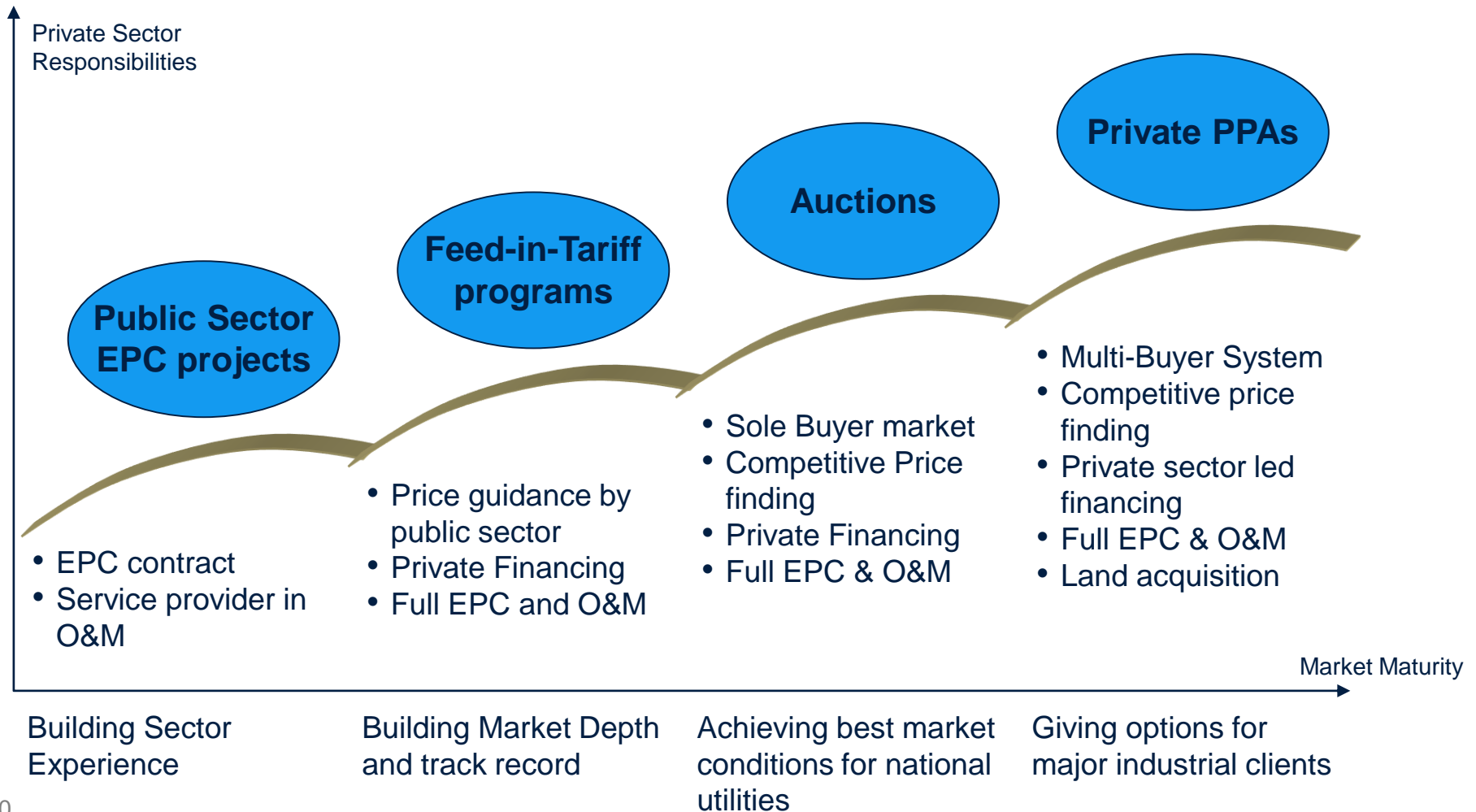
Source: "Power Forward: Why the World's Largest Companies Are Investing in Renewable Energy," David Gardiner & Associates, WWF, CERES, and Calvert Investments (2013).

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Developing a Renewable Energy Program

Renewable Energy programs

Choice of the appropriate model depends on the strategic approach ...



General Remarks

Model is relevant but bankability of the scheme is even more:

- There are examples of very successful FiT
- And examples of very unsuccessful auctions

RES scheme (and PPA) are way of risk allocation between private producer and public off-taker

- Risk shall be taken by the party that can manage it
- If both parties can manage the risk, it shall be taken by the party who can do it cheaper

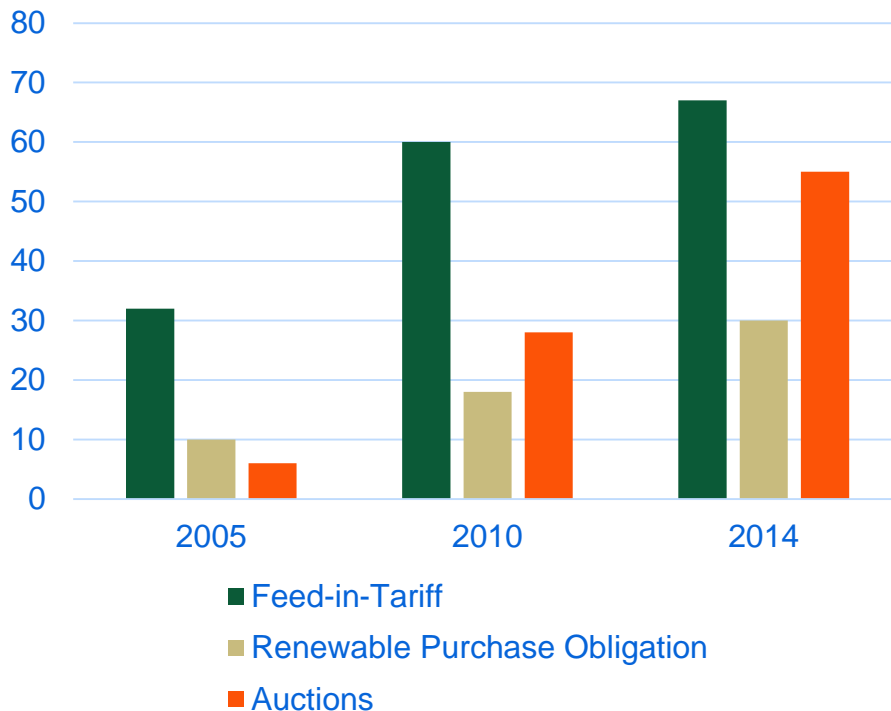
Risks transferred to private side will be

- Mitigated through higher price (if it is auction)
- Lack of interest to apply if price is fixed and not enough

Market evolution

Renewable Energy policy support mechanisms are increasingly introduced worldwide with auctions having the highest growth in recent years

Number of countries with renewable energy policies, by type



Source : IRENA 2015

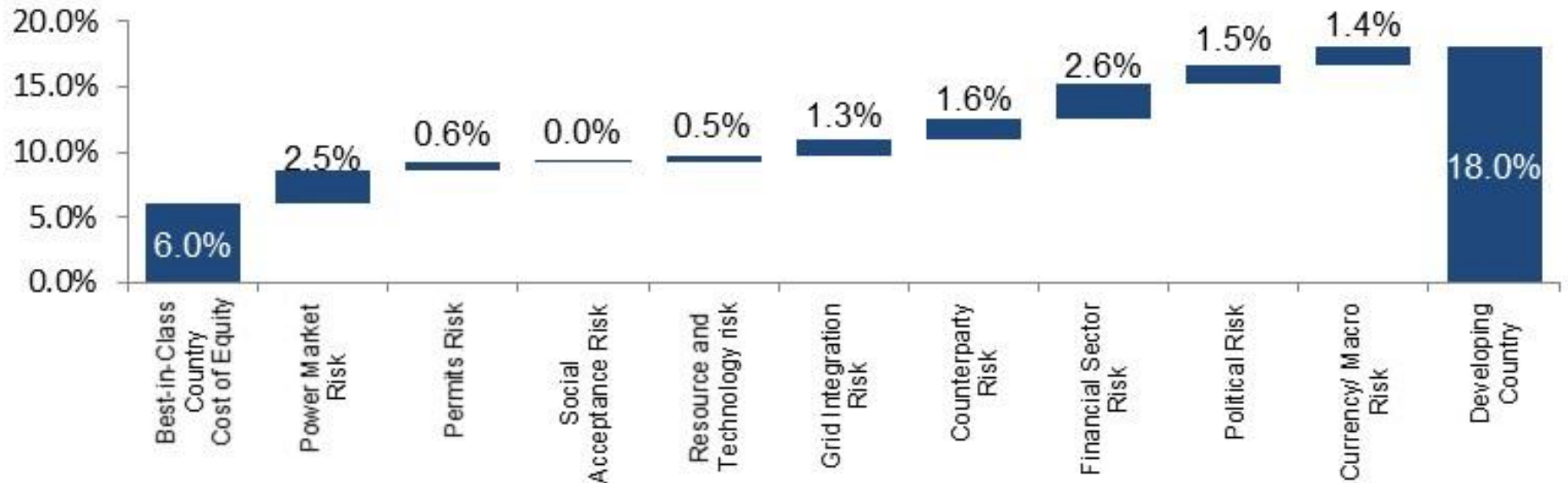
- ✓ All 3 forms of policies are increasing
- ✓ FiT remains the most common type
- ✓ Auctions have been experiencing the highest growth

Shift due to:

- Decrease of cost of technologies
- Increase of competitiveness between developers
- Shift from effectiveness to efficiency on policy

De-risking

Cost of Equity



Prepared by UNDP for Belarus market interviewing different stakeholders

- Political risk
- Off-taker risk
- Change of law
- Currency (FX, convertability)
- Curtailment risk
- Termination payment

Weaknesses of FiT Model



CAPEX, OPEX, GEN, WACC

$$WACC = \frac{E}{E + D} K_E + \frac{D}{E + D} K_D$$

$$WACC = \frac{30\%}{30\% + 70\%} 20\% + \frac{70}{30\% + 70\%} 12\% = 14.40\%$$

Ways to improve basic FiT model:

- Regional/Sub-regional tariffs (because of the potential and/or power system)
- Size dependent tariff (economy of scale)
- Caps (to limit penetration of specific technology)
- Gradual increase of tariffs (to implement best projects at the beginning)

Models for RES Auction/Tendering

Site(s) Tendering

Public authority responsible for site selection and pre-development

PROS:

- Remove risk to private sector linked with:
 - land conversion/lease,
 - grid connection
 - environmental/social
 - measurement
 - licensing

CONS

- Selection of not best locations
- Upfront cost for the Government

To be considered

- Correlation between different technology generation patterns and system needs (seasonal/daily)
- Interest of developers to develop project that will not be selected
- Risk of semi-developed project and wrong determination of the price
- Risk that winning bidder will face some E&S, grid connection, or other issues

National or regional quota tendering

Competition without “Bands”

Competition with “Bands”

Specific Technology

Size of Projects

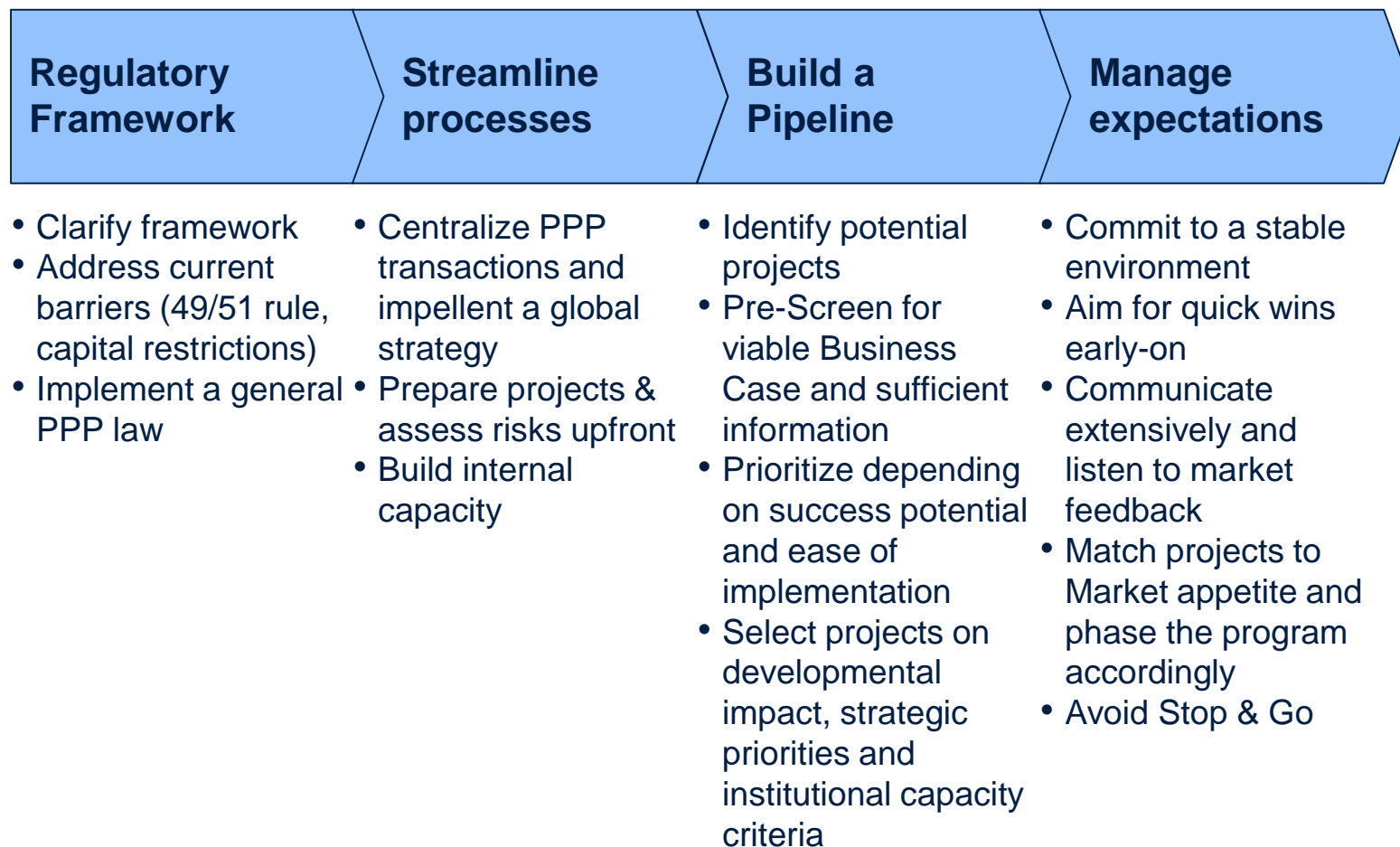
Sub-region/location

Share of Local Content

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The Turn Key Approach - Scaling Solar

Create an enabling environment



SCALING SOLAR: A WORLD BANK GROUP INTEGRATED SOLUTION

Creating a one-stop-shop

Scaling Solar brings together several World Bank Group services under a single engagement:

- ✓ Advice to assess the right size and location for power plants in grid.
- ✓ Simple and rapid tendering to ensure strong competition from committed industry players.
- ✓ Standardized, balanced project documents to eliminate drafting and negotiation delays.
- ✓ Competitive financing and insurance attached to tender and available to all bidders.
- ✓ Risk management and credit enhancement products to lower financing costs and deliver lower tariffs.

Scaling Solar is a “**one-stop-shop**” for Governments to rapidly mobilize competitive privately funded grid connected solar projects within 2 years from start

SCALING SOLAR: A WORLD BANK GROUP INTEGRATED SOLUTION

What is new about this?

1

DELIVERY SPEED & EFFICIENCY

- ✓ Templates (RFQ, RFP, PPA, GSA) support rapid & low cost tender preparation
- ✓ Balanced docs and stapled financing avoid negotiation
- ✓ Only one mandate for the entire Transaction delivery

2

OPTIMIZATION & RISK MANAGEMENT

- ✓ Site selection & development minimize uncertainty and optimize for grid
- ✓ Stapled PRI and off-taker credit enhancement lower risks & so tariffs
- ✓ Benefit of global Best-Practice

3

ECONOMIES OF SCALE

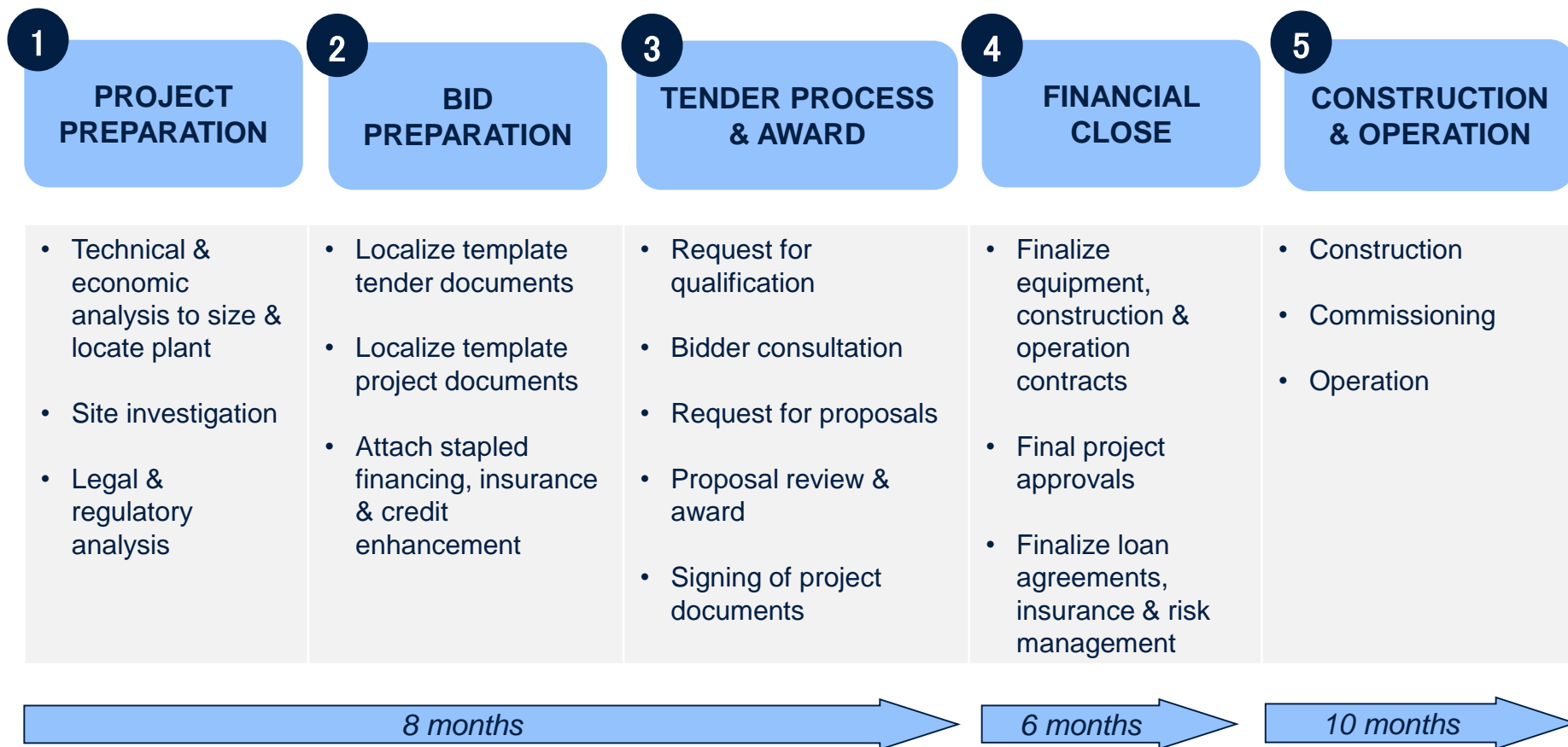
- ✓ Lower Risk perception
- ✓ Standardization across multiple countries creates large regional market
- ✓ Delivers benefits of economies of scale

⇒ A standardized approach delivers an efficient, competitive and scalable program

⇒ Implementation is coordinated, collaborative and fast

SCALING SOLAR: A WORLD BANK GROUP INTEGRATED SOLUTION

A solar IPP procurement process for emerging markets governments



Developers that have participated in Scaling Solar tenders

High quality bidders generally deliver better prices



Thank you !

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