

Insights from NAMA development in Peru

Developing an Enabling Environment and A financial Mechanism to foster
technology uptake

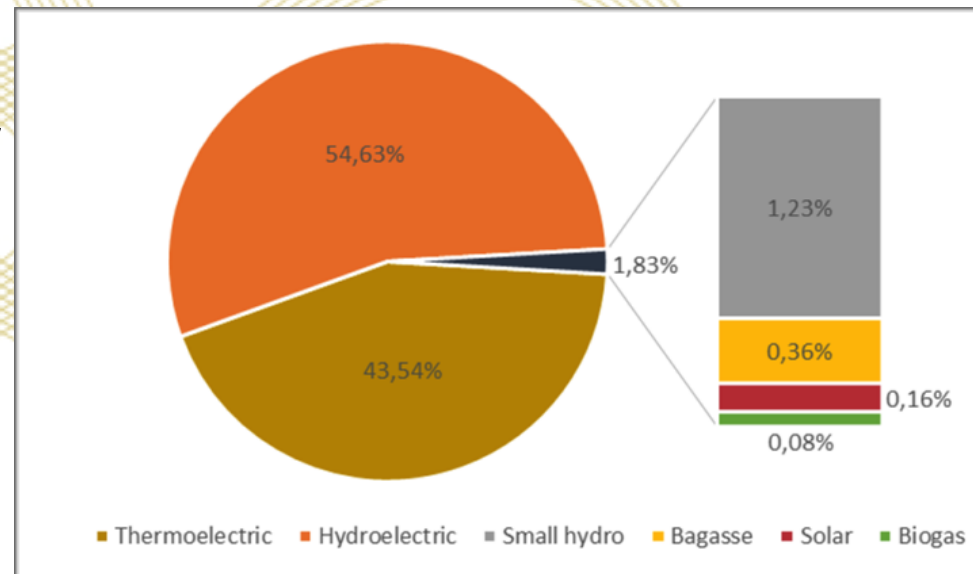
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Overview

- The situation for biomass waste in Peru
- Barriers that hinder biomass from developing
- The scope of the NAMA
- Building an enabling environment for biomass waste to energy
- Building a financial mechanism to foster biomass waste to energy

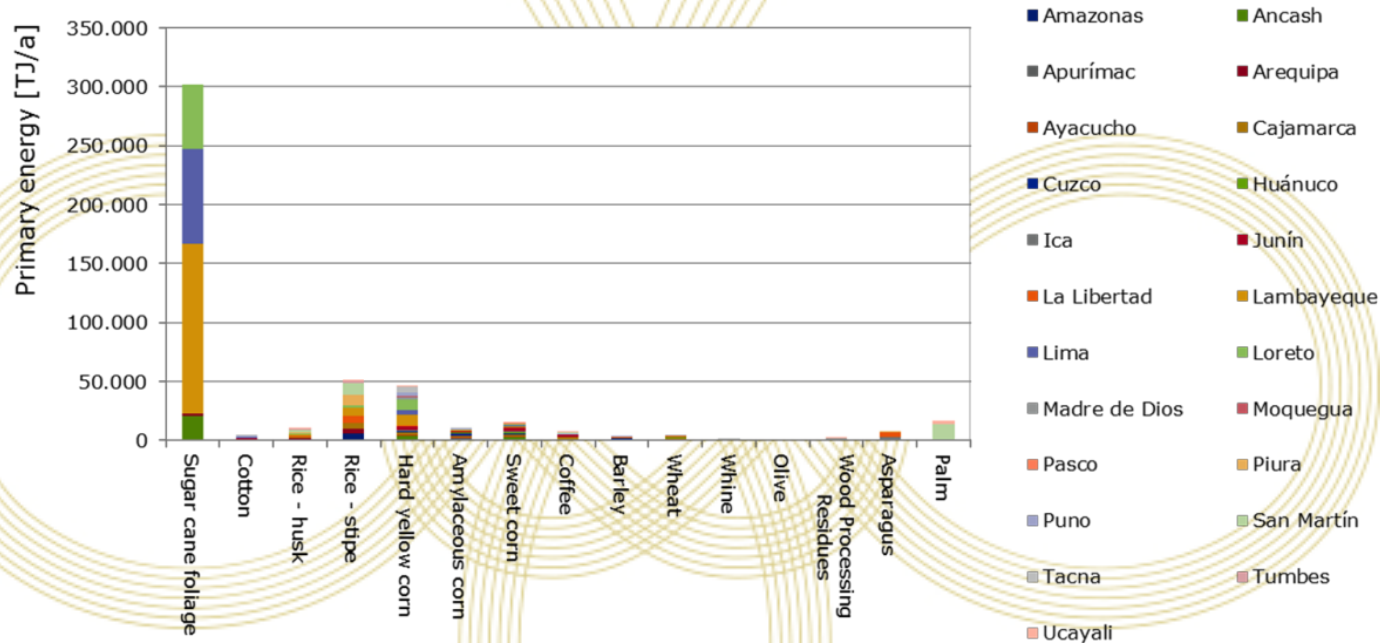
Situation biomass waste Peru

- Large hydro likely to decline and likely no addition potential
- High electricity forecasted, low electricity access
- Thermoelectric generation depend on imported fuels
- — need to move to RE



Situation biomass Waste Peru

- Large potential of biomass waste in Chile due to agricultural activities



Peru – Existing instruments

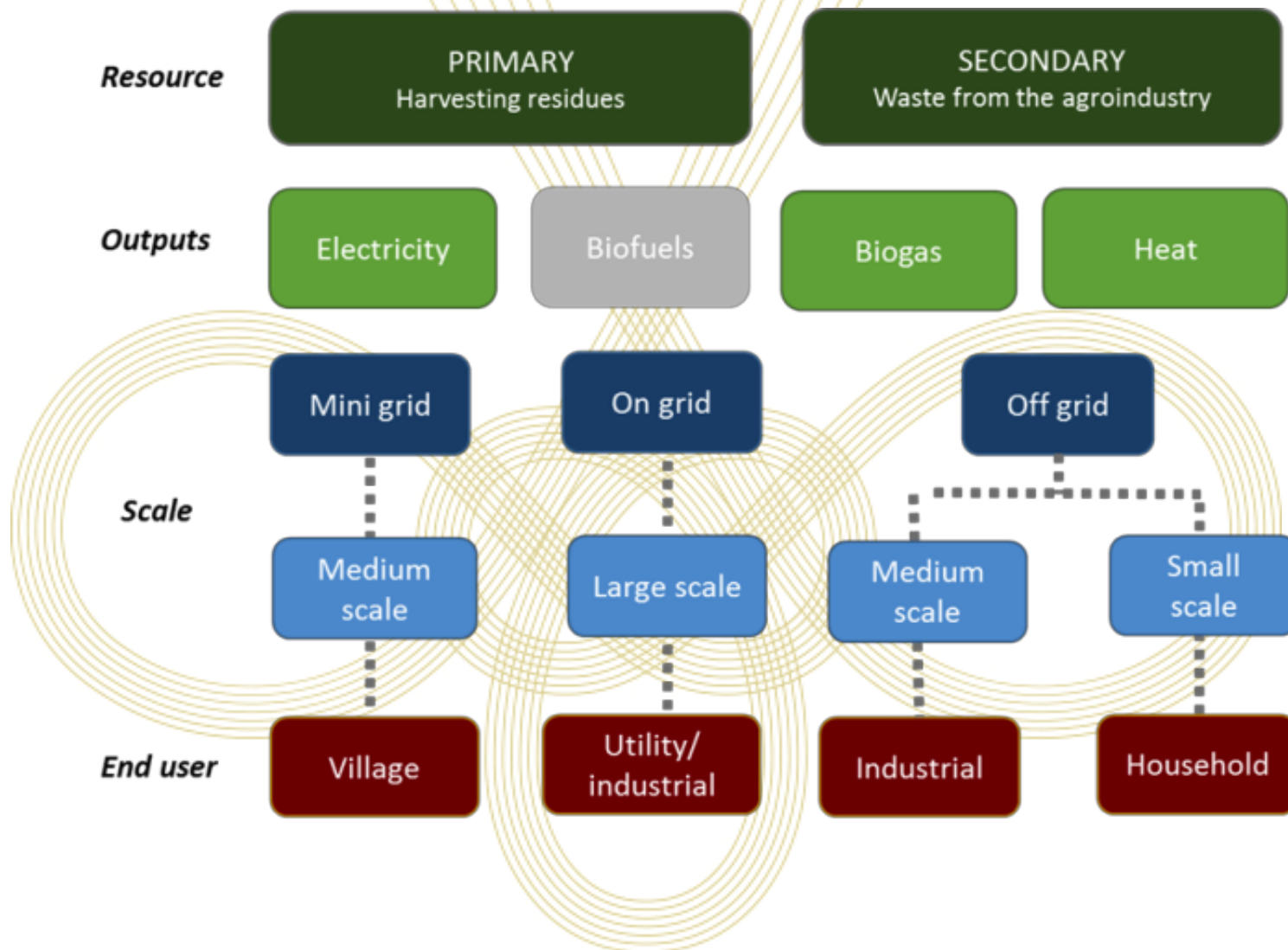
Technology	Year	Volumes auctioned (GWh/year)	Volumes contracted (GWh/year)	Success rate (%)	Average contract price (USD/MWh)	Ceiling price (USD/MWh)
Small hydro	2009/2010 (first call)	500	160	32%	60.2	74
	2009/2010 (second call)		18 MW	5%	64	-
	2011	681	681	Almost 100%	53.2 (-11%)	-
Solar PV	2009/2010	181	173	96%	221.1	269
	2011	43	43	100%	119.9 (-46%)	-
Wind	2009/2010	320	571	178%	80.4	110
	2011	429	473	100%	69.0 (-14%)	-
Biomass and waste	2009/2010	813	143	17.6%	63.5	120
	2011	828	14	2%	99	-

Existing tender process with limited success

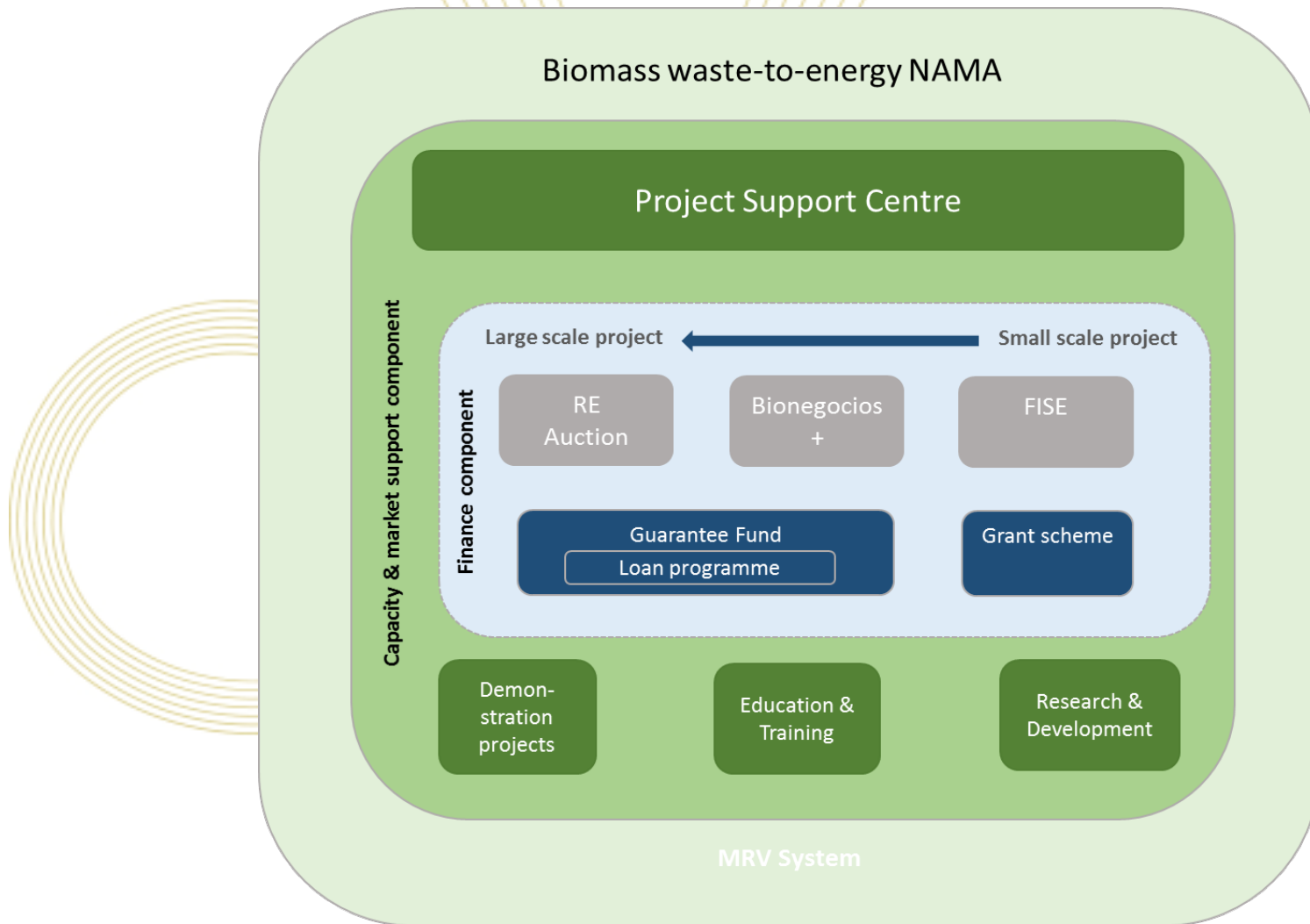
Identified Barriers to Biomass development

- Financial
 - Bank risk premium due to lack of experience with biomass waste to energy projects
 - Informal biomass markets
- Knowledge/ capacity
 - Lack of knowledge in agricultural sector on benefits
 - Lack of capacity in private sector to develop projects
 - Lack of capacity in government to setup framework condition
- legal/ regulatory
 - Delays in project authorization

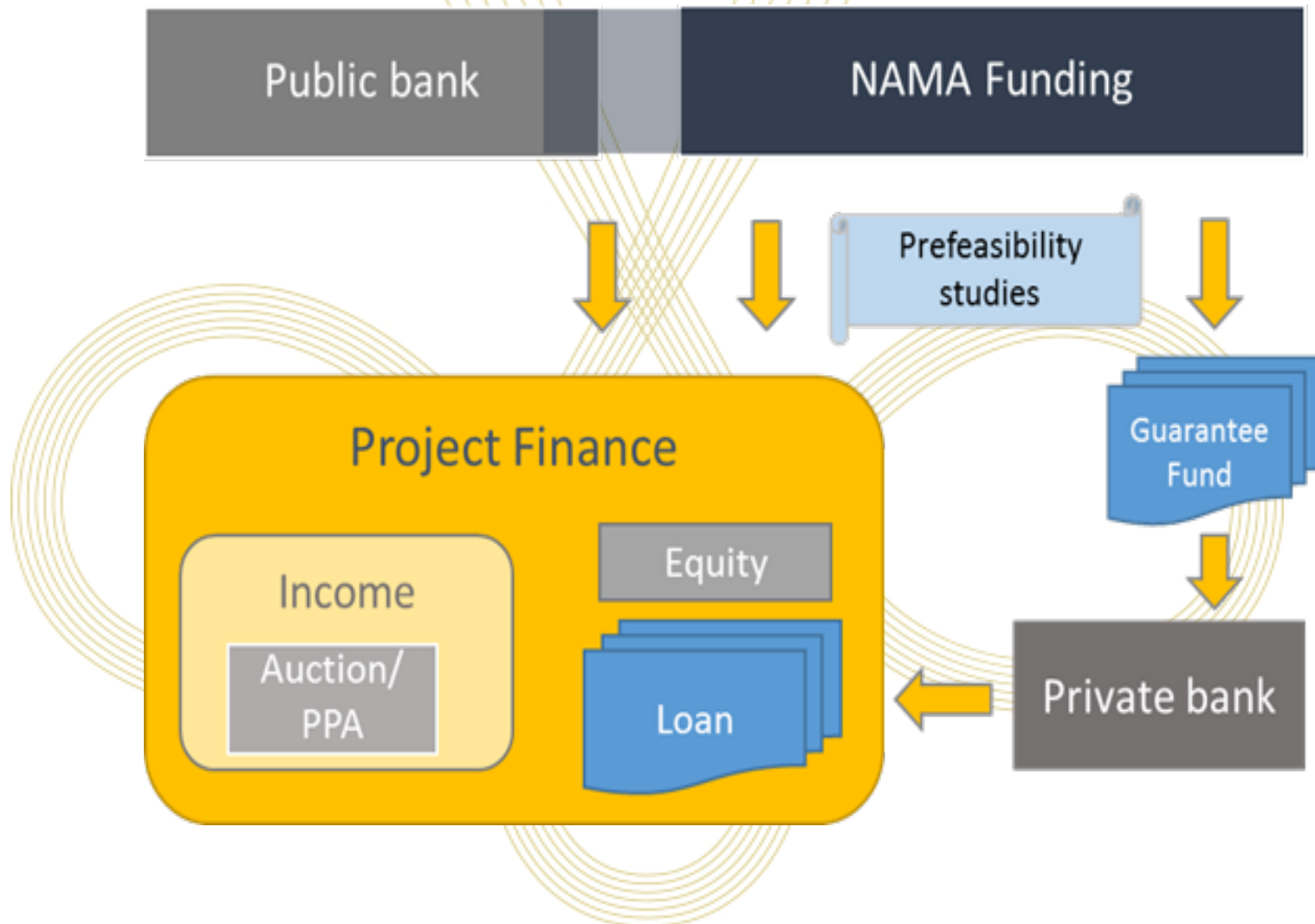
Scope of the NAMA



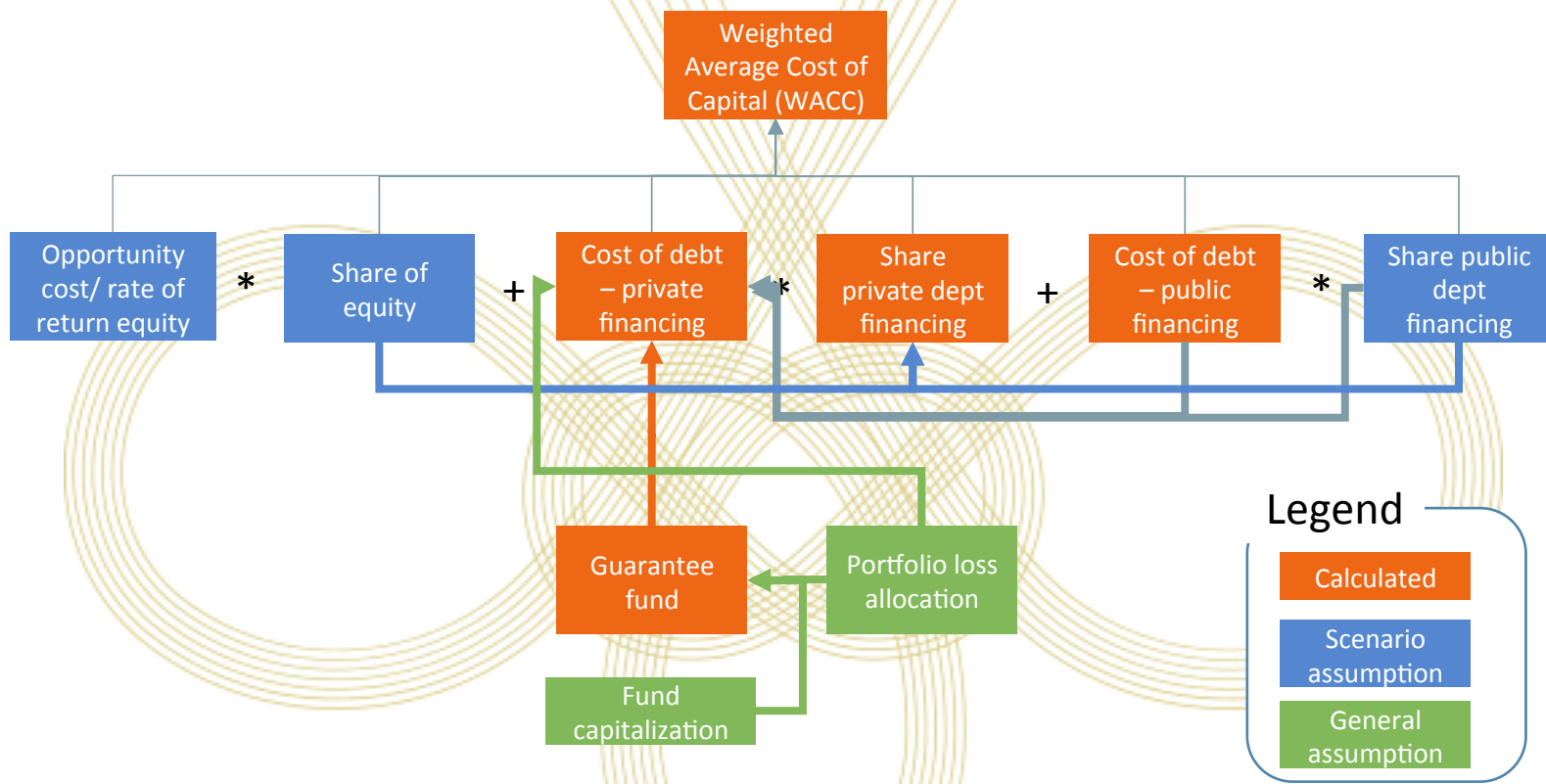
Building An Enabling environment



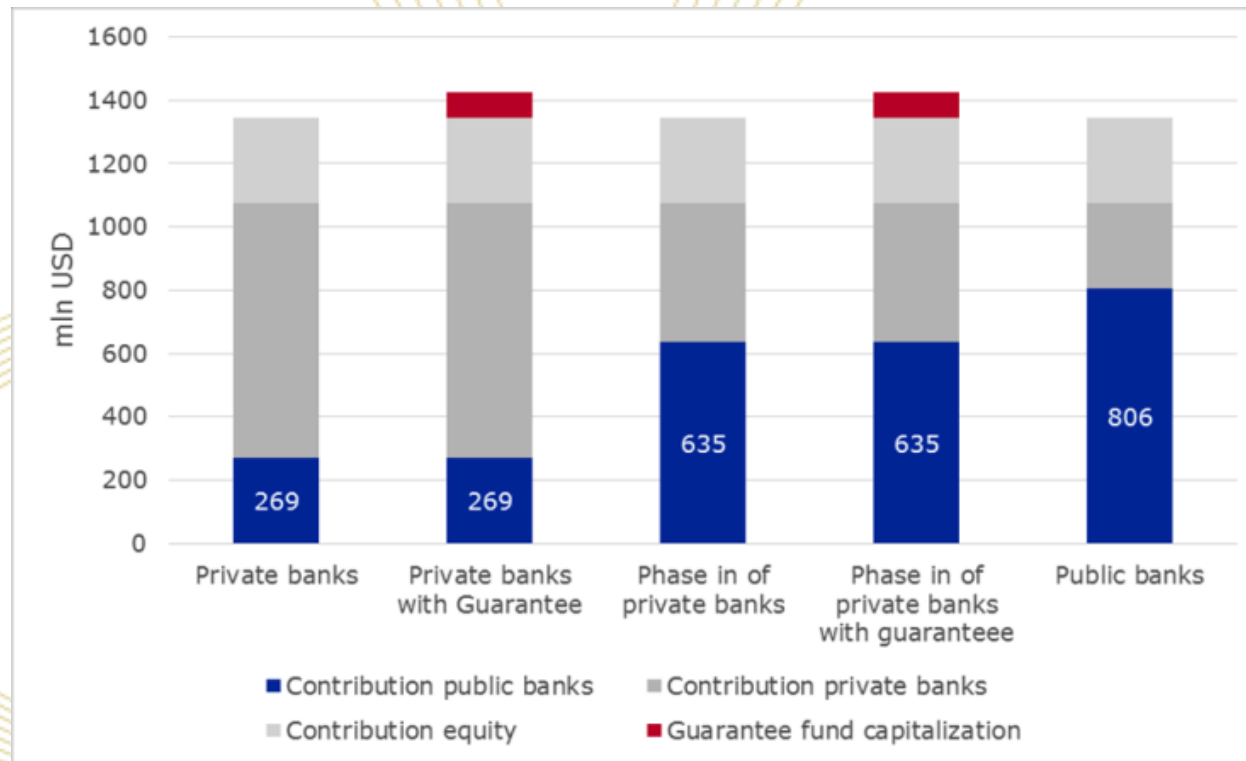
Building a financial mechanism



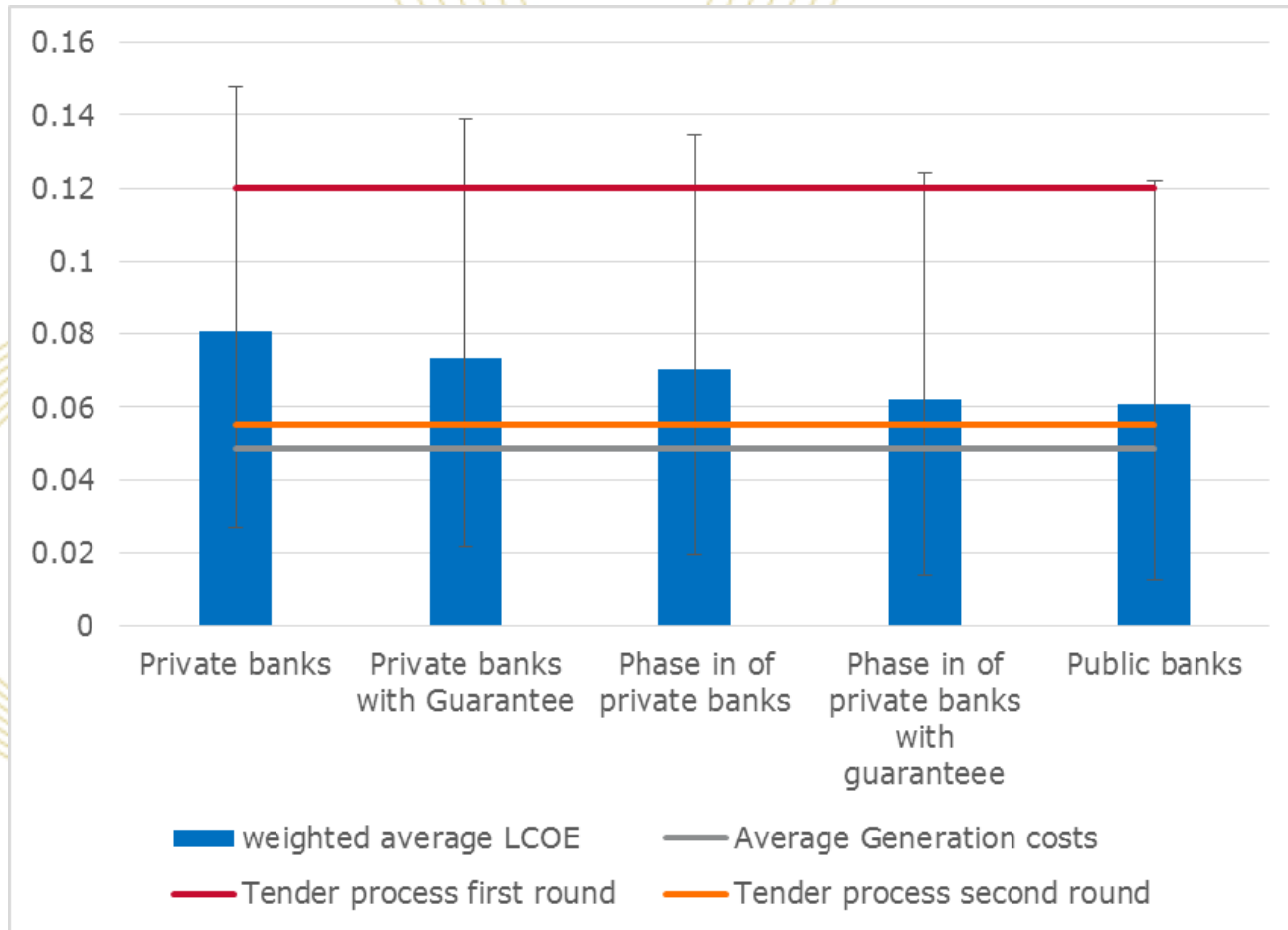
Financial Mechanism - Functioning



Financial mechanism- Options FOR financing



Financial mechanism – impact



Recommendations

- Enabling environments need to be build around frameworks in the country - however building on international best practice experience is essential
- The proper design of a financial mechanisms can contribute towards making projects more feasible. It is crucial to find the right balance between public and private finance
- Interventions need to be combined as they also ultimately depend on each other