

Renewable Energy

Lower Mekong Initiative
Renewable and Clean Energy
Business Dialogue 2015

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Imagination at work.

Regional Wind Potential

THAILAND

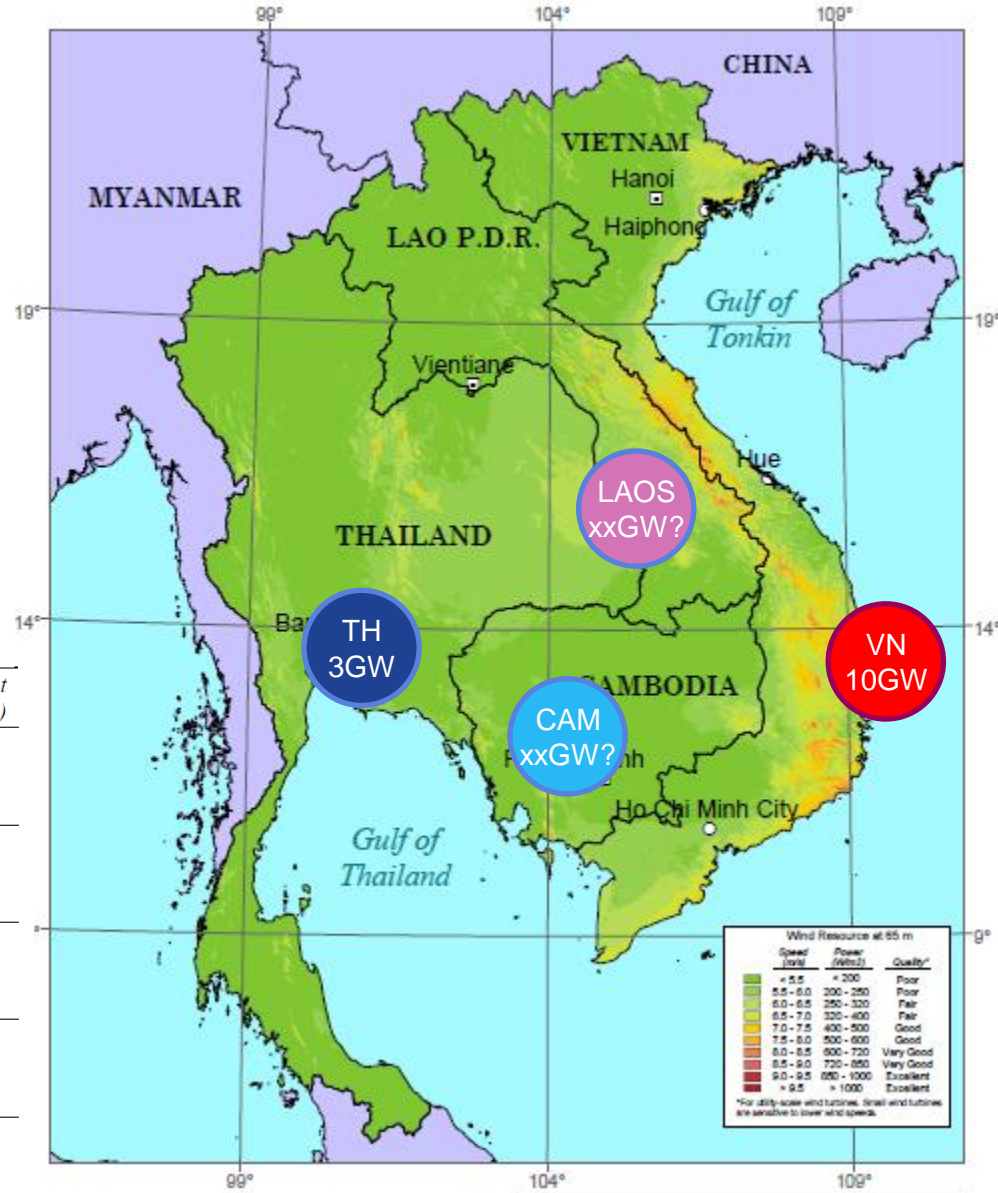
- Target – 1.8 GW by 2020 (230MW installed)
- Very low wind... 6m/s @ 120m height
- High PPA... attractive proposition

VIETNAM

- Target – 1 GW by 2020 (60 MW installed)
- Good wind resources : 6-7m/s @ 80m height
- Low FiT and financing challenges

World bank wind atlas

Country	Characteristic	Poor < 6 m/s	Fair (6-7 m/s)	Good (7-8 m/s)	Very Good (8-9 m/s)	Excellent (> 9 m/s)
Cambodia	Land Area (Sq. Km)	175468	6155	315	30	0
	% of Total Land Area	96.4%	3.4%	0.2%	0.0%	0.0%
	MW Potential	NA	24620	1260	120	0
Laos	Land Area (Sq. Km)	184511	38787	6070	671	35
	% of Total Land Area	80.2%	16.9%	2.6%	0.3%	0.0%
	MW Potential	NA	155148	24280	2684	140
Thailand	Land Area (Sq. Km)	477157	37337	748	13	0
	% of Total Land Area	92.6%	7.2%	0.2%	0.0%	0.0%
	MW Potential	NA	149348	2992	52	0
Vietnam	Land Area (Sq. Km)	197342	100361	25679	2187	113
	% of Total Land Area	60.6%	30.8%	7.9%	0.7%	0.0%
	MW Potential	NA	401444	102716	8748	452



Market fundamentals



Opportunity

- Wind is available, accessible
- Technology drives affordable
- Competitive with thermal
- Fast deployment



Challenges

- Regulation framework
- Developer capability
 - Knowledge
 - Equity
 - Financing
- Offtake risk
- Grid connection

Maximize wind in fuel mix. . .

Vietnam Energy Market

- High demand growths: average 15% annually driven by industrialization
- Power generation is under capacity: total 33 GW installed capacity by '12
- Shortage of primary energy resources
 - Coal: Start import from 2016
 - Hydro: No more large capacity
 - O&G: Slow developments
 - water dispute with CHN
 - Lack of existing infrastructure
 - Contractors' capabilities
- Pilot competitive power market started since 2011
 - Better tariff to encourage private sector investment in PG
 - Currently only works for coal and hydro

Energy value chain

