

**2011 Cambodia Outlook Conference  
A Partnership of CDRI and  
ANZ Royal Bank**

**Phnom Penh Hotel, 16 March 2011**



**CAMBODIA  
ENERGY  
STATUS &  
ITS DEVELOPMENT**

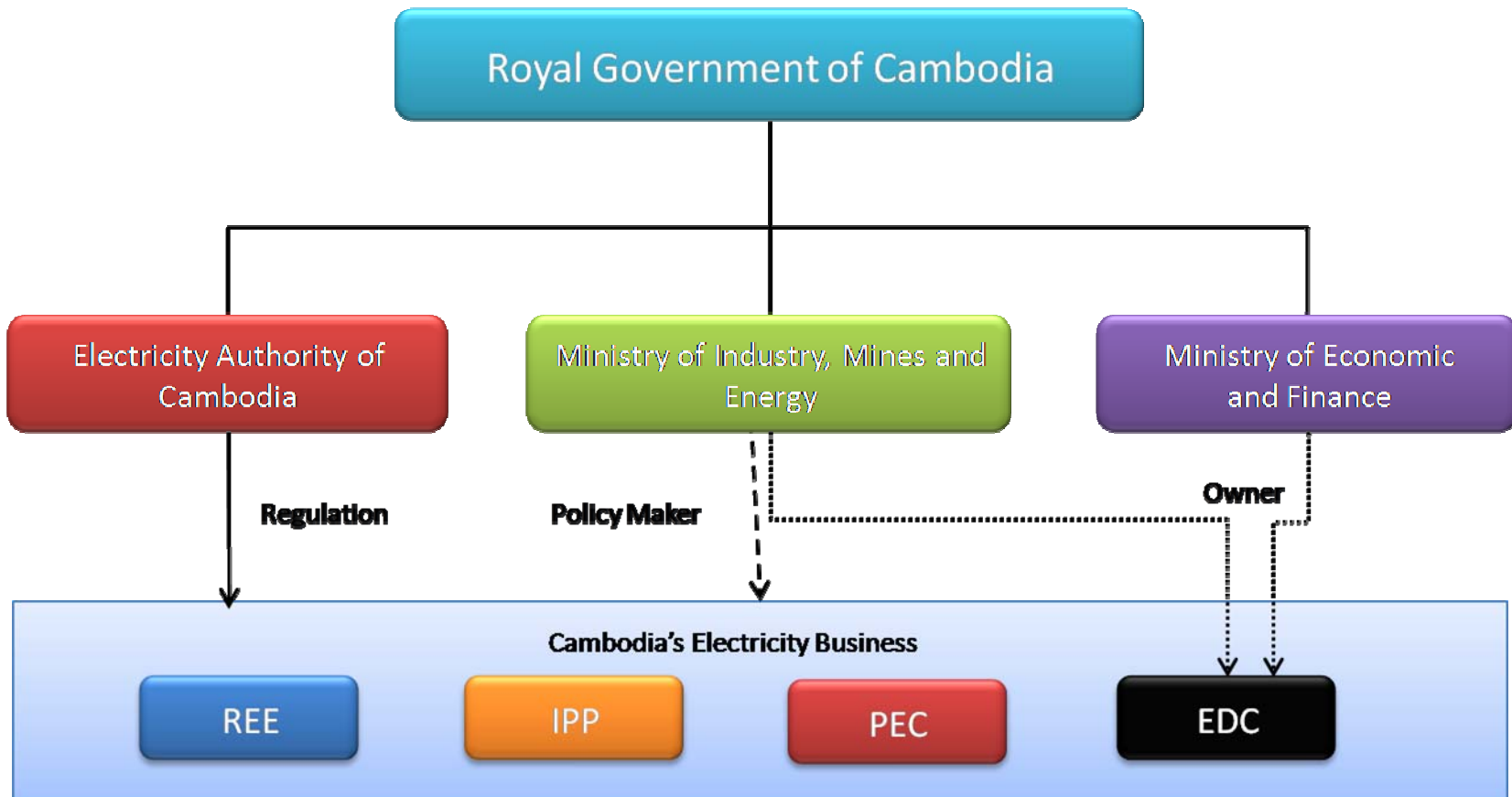
**VICTOR JONA  
DDG OF ENERGY  
MIME**

# BACK GROUND

- Country: Area 181,035 sq km, water 2.5%. Population 13,811,446 Pop growth rate 1.54% (NIS)
- GDP growth rate 3% (2010)  
GDP/capita \$783 (2010)
- GDP by sectors:
  - agriculture 31%, -industry 26%,  
-service 43%.
- Hydro power potential about 10,000 MW, at present the capacity < 3% used



# Structure of Electricity Organization



- .....> -Ownership of EDC
- - -> -Policy, Planning, Technical Standard
- > -Tariff, License, Financial Performance, Enforce the regulations, Rule and Standard.

# ENERGY POLICY



To provide an adequate supply of energy throughout Cambodia at reasonable and affordable price,



To ensure a reliable and secured electricity supply at reasons price, which facilitates investment in Cambodia and development of national economy,



To encourage exploration and environmentally and socially acceptable development of energy resources needed for supply to all sectors of Cambodia economy,



To encourage the efficient use of energy and to minimize the detrimental environmental affects resulted from energy supply and consumption.

# POLICY OF ELECTRICITY TARGET

70% of rural households have access to quality electricity services by 2030

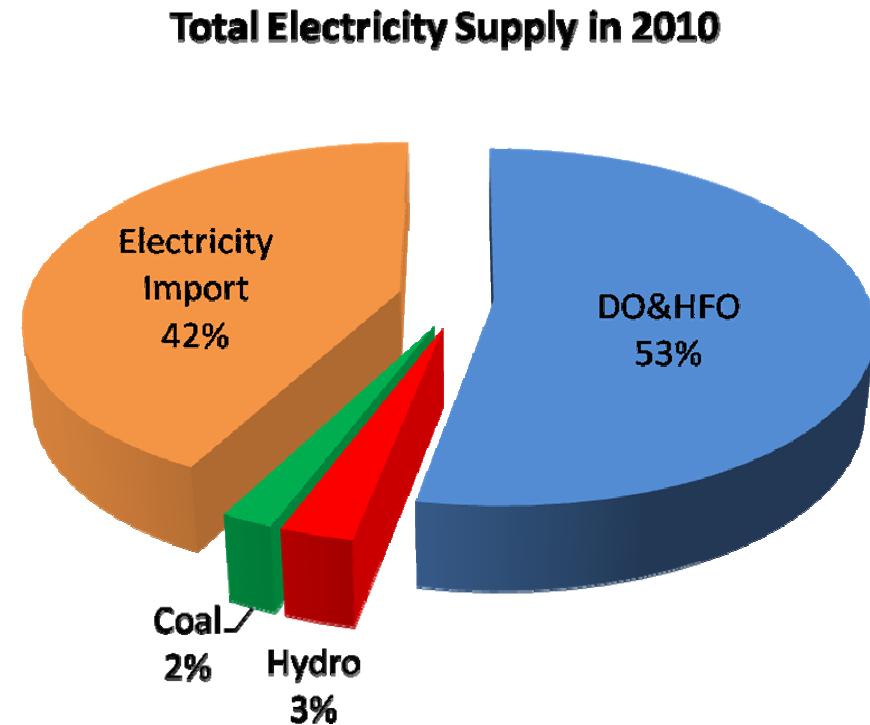
100% of villages have access to electricity services by 2020

## OVERVIEWS OF THE POWER SECTOR

- ⊙ The annual electricity demand growth rate in the country 19%, while in Phnom Penh the electricity demand growth rate high as 25%.
- ⊙ The annual electricity demand per capita increased from 138.4 kWh in 2009 to 159.2 kWh by 2010.
- ⊙ The peak capacity supply increased from 472MW in 2009 to 538MW in 2010. At the same time the capacity supply in Phnom Penh was 300 MW.

- ⦿ In 2010 the national electrification just reached to 29%, while in the household in urban areas were almost 100% electrified and only 12.3% of the total household in rural areas.
- ⦿ Beside domestic supply, Cambodia imported electricity from Laos, Thailand and Vietnam with total capacity about 225MW in 2010. It increased about 48% from 2009.
- ⦿ Cambodia has a good potential of hydropower about 10,000 MW. At present, about 10% to the potential under construction.

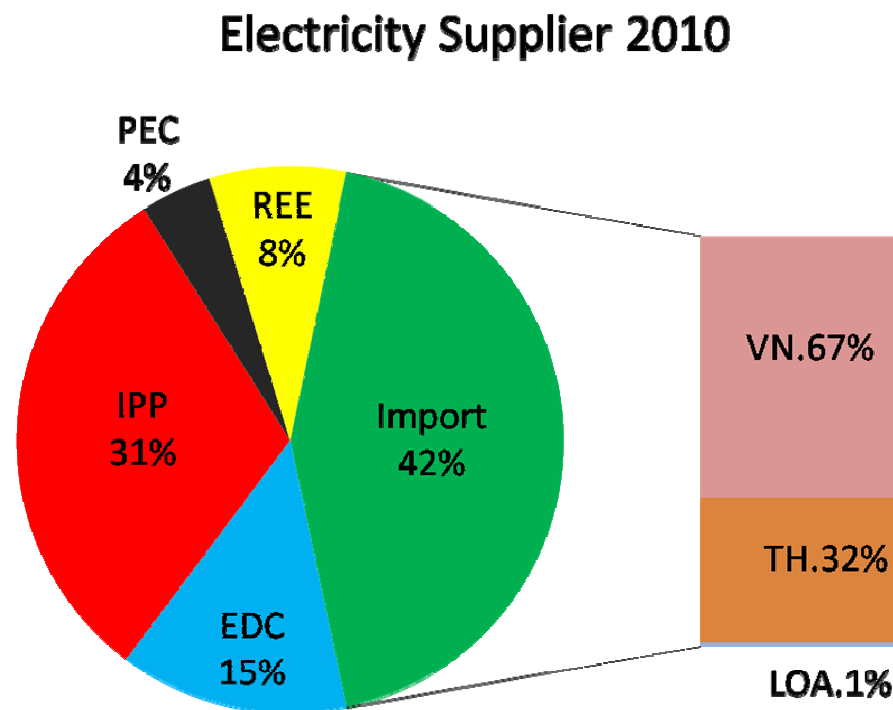
- ⦿ In 2010 the total electricity supply increased to 2,203.18 GWh within install capacity about 537MW.
- ⦿ The electricity import was accounted about 42% of total electricity production.





◎ The main electricity supply is IPP accounted 31%, EDC supplied 15%, REE about 8%, PEC 4%, and remainder electricity imported.

◎ Cambodia imported electricity mainly from Vietnam 67%, Thailand 32% and Laos PDR 1%.



# CAMBODIA POWER STRATEGY

A- Development of Generation

B- Development of Transmission

C- Power trade with neighboring countries

# A- Development of Generation

## A1- Project Existing

No.	Power-Project	Install Capa.MW	IA/PPA/LA	Company	Country	COD
1	Kirirom I	12	BOT	CETIC	China	2001
2	Ochum	1		EDC	Cambodia	2002

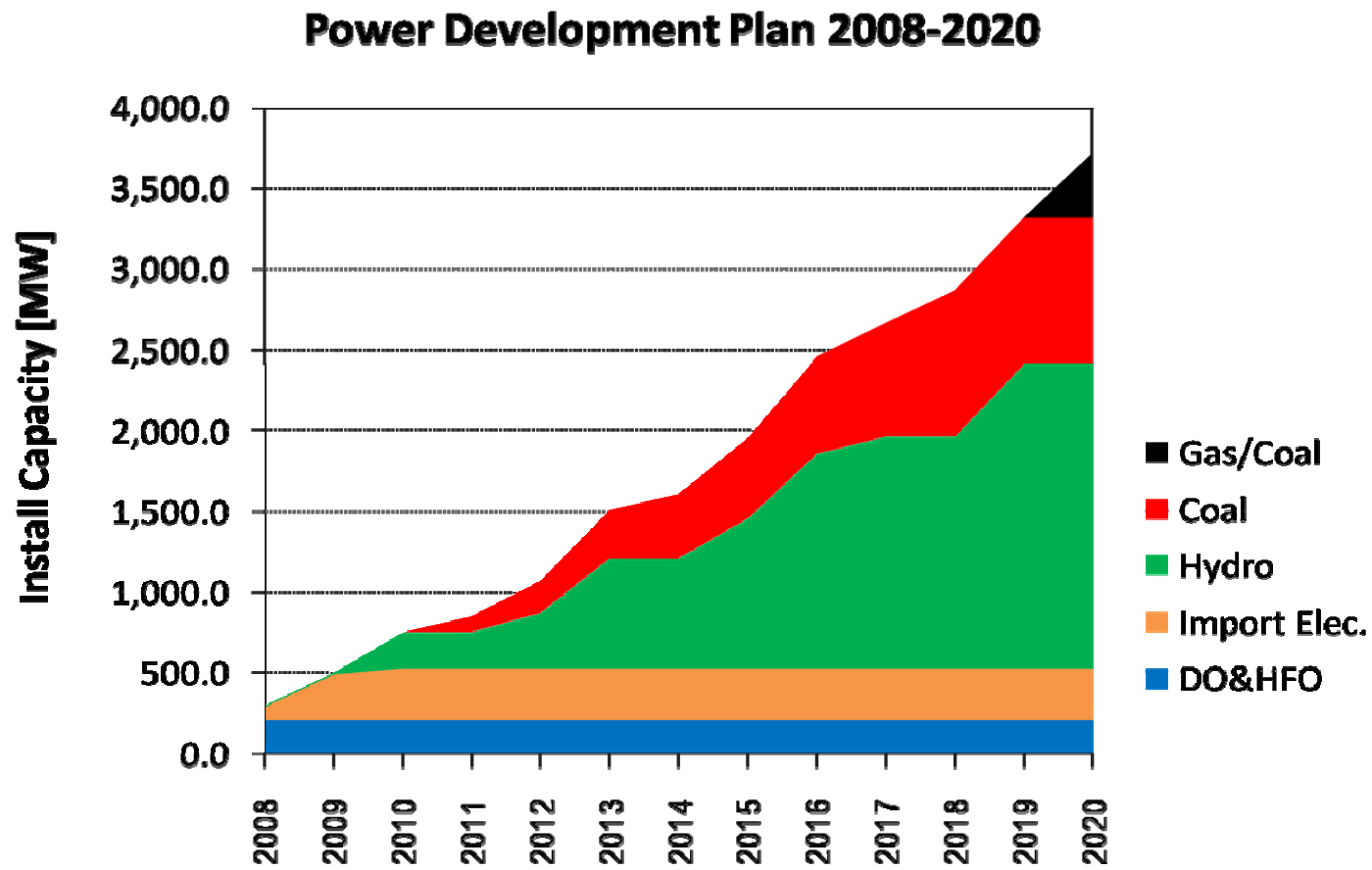
## A2- Project Under Construction

No.	Power-Project	Install Capa.MW	IA/PPA/LA	Company	Country	COD
1	Kamchay Hydro	193	BOT	Synohydro	China	2011/12
2	Kirirom III	18	BOT	CETIC	China	2011
3	Coal Power Plant	200	BOO	Synergy	Cambodia	2012
4	Atay Hydro	110	BOT	CHD	China	2012
5	LSt. Russei Chhrum	338	BOT	CHC	China	2014
6	Tatay Hydro	246	BOT	Synohydro	China	2015

### A3- Project Under MOU Study

No.	Hydro-Project	Install Capa.MW	IA/PPA/LA	Company	Country	Plan
1	Lower Sesan II & Lower Srepok II	420	PFS	--	Vietnam	2016
2	Sambor Hydro	465/2600	F/S	--	China	2019
3	Lower Sesan III	375	F/S	--	Korea	
4	Lower Srepok III	330	F/S	--	China	
5	Lower Srepok IV	235	F/S	--	China	
6	Battambang I	24	F/S	--	Korea	
7	Battambang II	36	F/S	--	Korea	
8	Stung Pursat I	75	F/S	--	China	
9	Stung Pursat II	17	F/S	--	China	
10	Prek Liang I	64	F/S	--	Korea	
11	Prek Liang II	64	F/S	--	Korea	
12	Stung Sen	40	F/S	--	Korea	
13	Stung Treng	980	F/S	--	Russia	

⦿ Base on PDP, by 2020, Cambodia intent to develop more domestic hydropower to contribute in the electricity supply which share more than 50%.



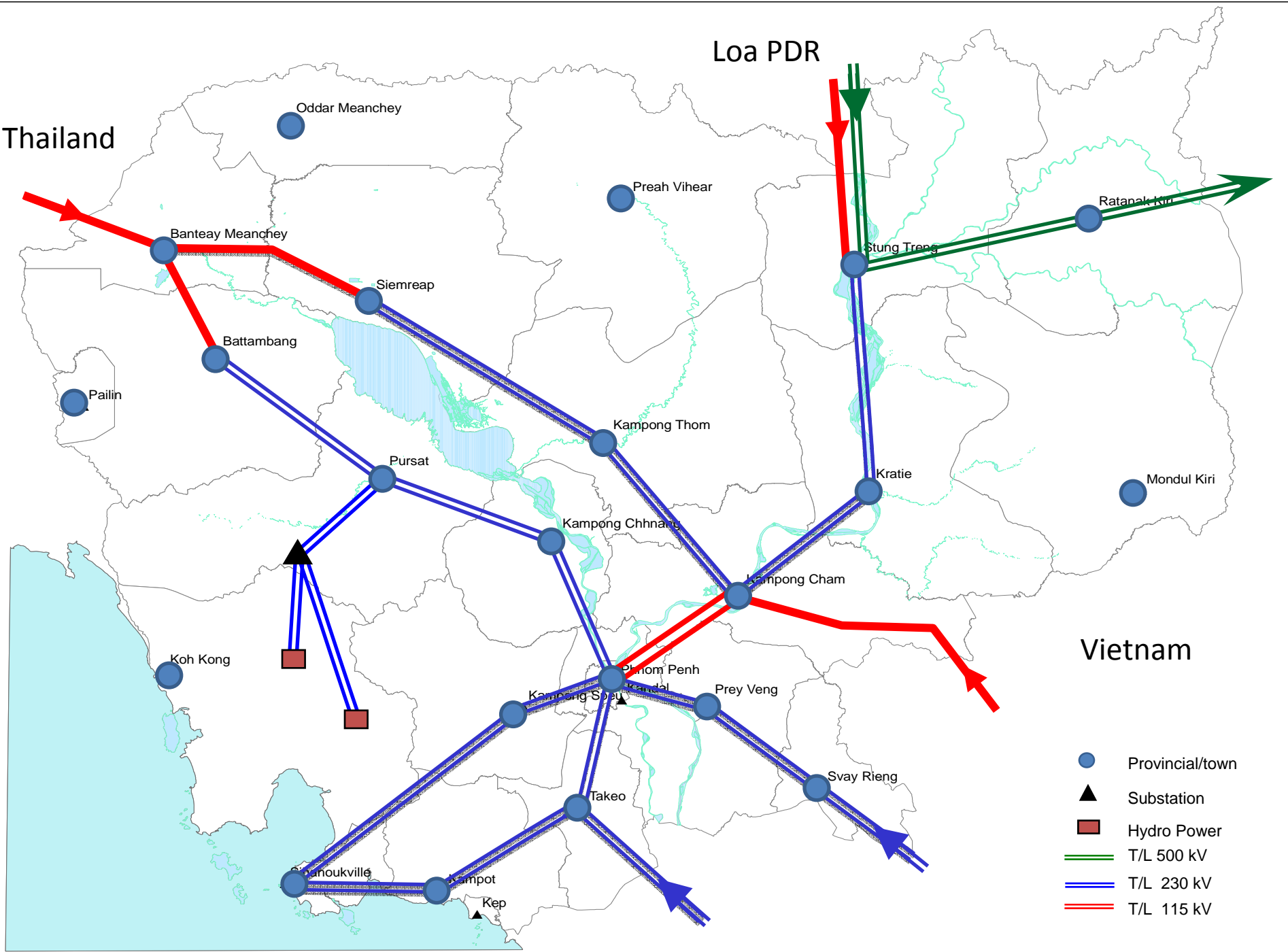


## B- Development of Transmission

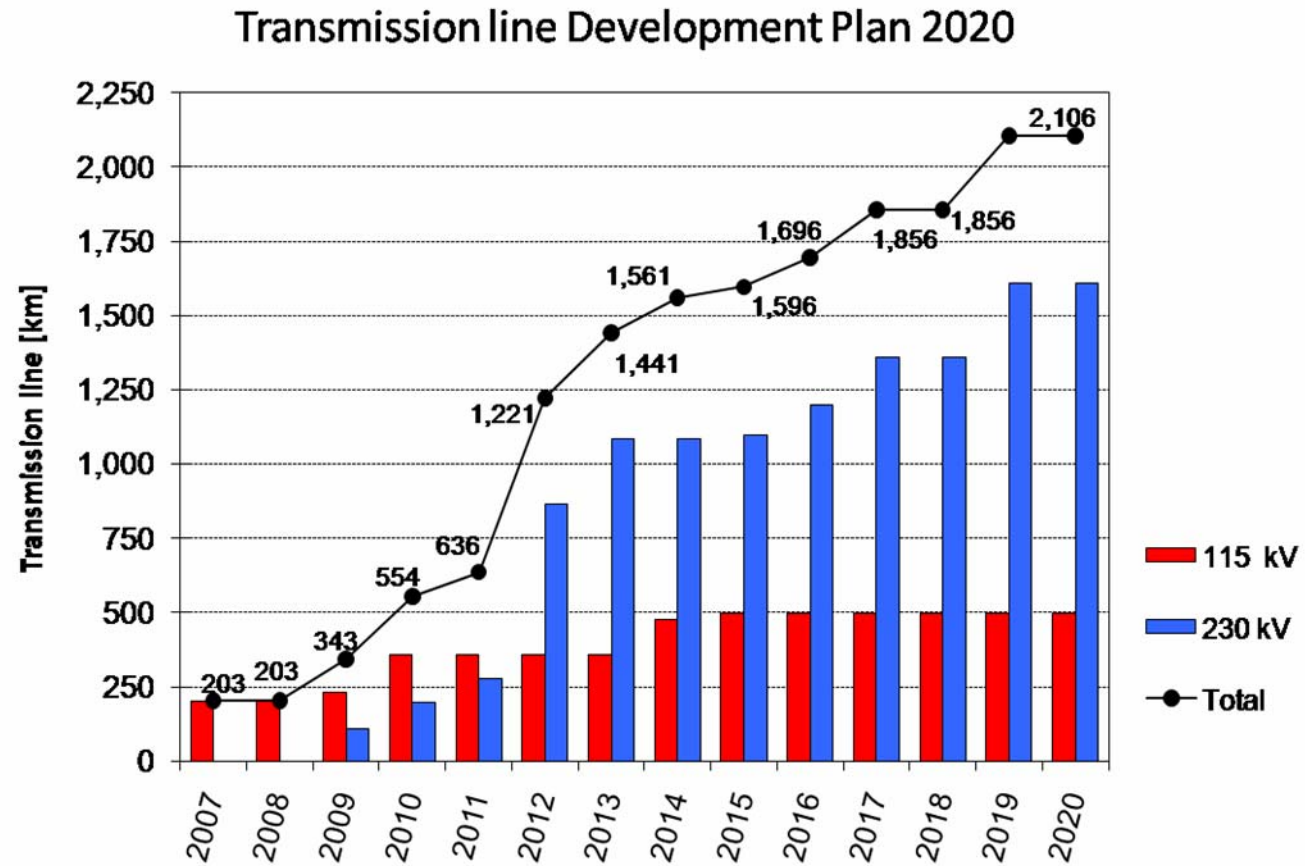
No.	Transmission Expansion Plan	Distance (Km)	Grant/ Invest	Year
1	230 kV, Takeo - Kompot, (construct substation in Kompot),	87	KFW	2011
2	115 kV, Steung Treng - Loa PDR, (construct substation in Steung Treng),	56	WB	2012
3	110 kV, Kampong Cham - Viet Nam, (construct 3 substations: - Kampong Cham, - Soung, - Pongnearkreak ),	68	WB	2010
4	230 kV, Kampot - Sihanouk Ville, (construct 2 substations: - Vealrinh - Sihanouk Ville),	82	ADB & JBIC	2011
5	230 kV, Phnom Penh - Kompong Chhnang - Pursat - Battambang, (construct 3 substations: - Kompong Chhnang, - Pursat, - Battambang),	310	CYC	2012
6	230 kV, Pursat - Osom, (construct 1 substation in Osom Commune),	175	CYC	2012
7	230 kV, Kampong Cham – Kratie,	110	CUPL	2012
8	230 kV, Kratie – Stung Treng,	126	INDIA	2012
9	230 kV, Phnom Penh – Kampong Cham,	110	CUPL	2012
10	220 kV, Phnom Penh – Sihanoukville, along national road 4,	220	CHMC	2013
11	230 kV, East Phnom Penh – Neakleung – Svay Rieng, (construct 2 substations: - Neakleung, - Svay Rieng)	120	CHMC	2014

No.	Transmission Expansion Plan	Distance (Km)	Grant/ Invest	Year
12	230 kV, Stung Tatay Hydro – Osom substation,	15	CHMC	2015
13	115 kV, West Phnom Penh – East Phnom Penh ( construct substation GS4 at South Phnom Penh)	20	WB	2015
14	230 kV, Reinforcement of transmission line on the existing pole, Phnom Penh – Kampong Cham (transmit power from Lower Sesan II + Lower Srepok II)	100	CUPL	2017
15	230 kV, Stung Chay Areng - Osom substation	60	CSG	2017
16	230 kV, Kampong Cham - Kampong Thom - Siem Reap, (construct 1 substation in Kampong Thom)	250	KTC	2019
17	500 kV, Loa PDR (Ban Sok)- Steung Treng – Vietnam (Tay Ninh), (construct substation in Steung Treng)	220	ADB	2019
	<b>Total Transmission Line</b>	<b>2,106</b>		



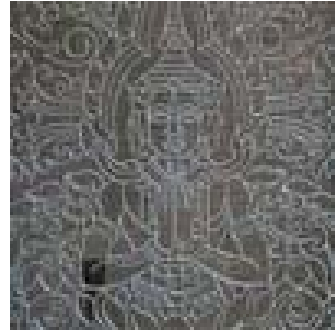


- By 2020, the development of transmission line would increase to more than 2,100 km.



## C- Power trade with neighboring countries

- ⊙ Currently, in order to fulfill the domestic demand the electricity import from neighboring countries is needed.
- ⊙ However, based on the indigenous potential resource and the MOU among members in the ASEAN region as well as GSM-power trade cooperation, up to year 2020, Cambodia would be capable of exporting electricity.
- ⊙ Based on the available potential of hydropower, Cambodia could export more than 4,000 MW.



THANK YOU!