



## **Greater Mekong Sub-region (GMS)**

**26<sup>th</sup> Meeting of the Regional Power Trade  
Coordination Committee (RPTCC-26)**

# **CAMBODIA Power Situation**

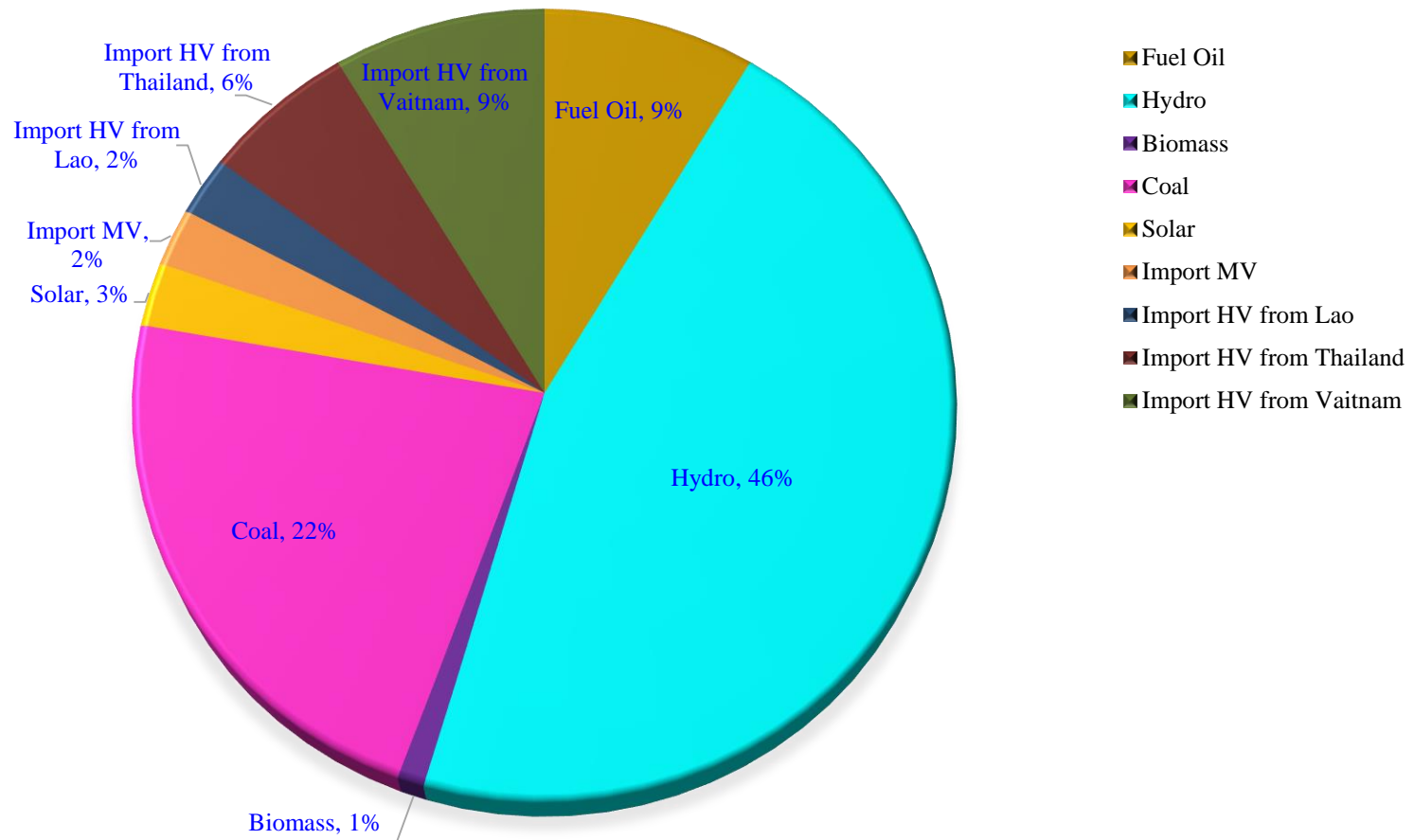


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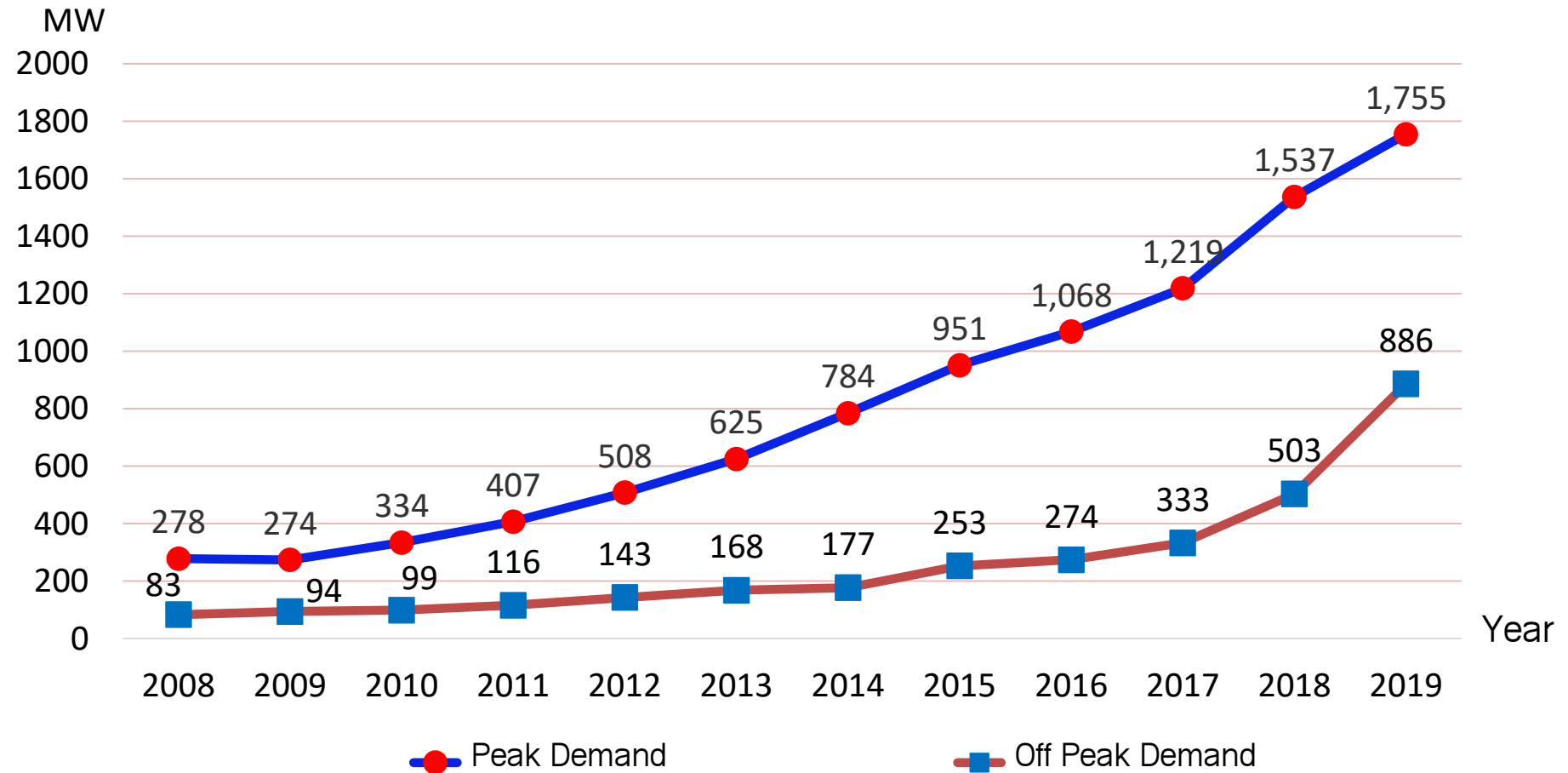
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# I- Present Development of Power Sector

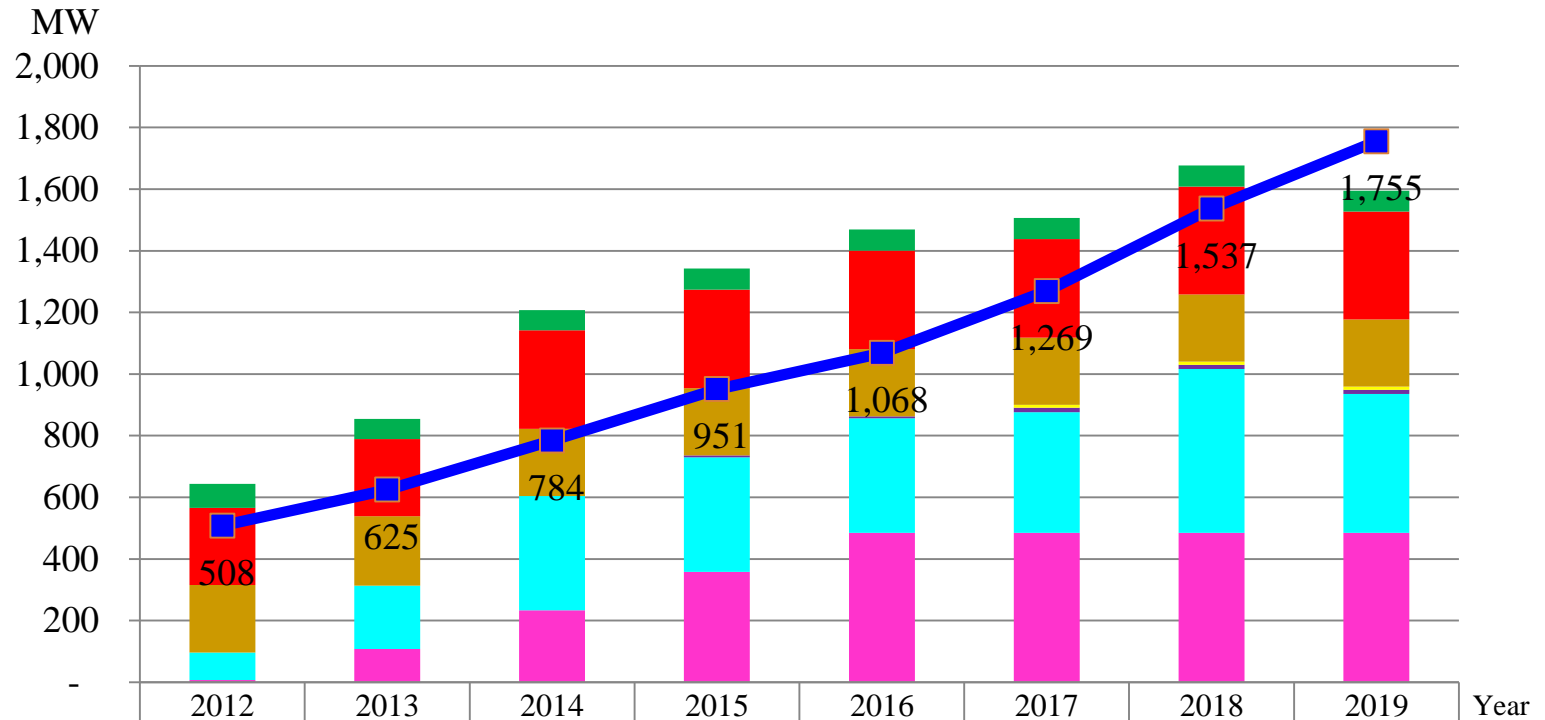
# Energy Sources Mix in 2019



# Peak Demand in National Grid from 2008 - 2019



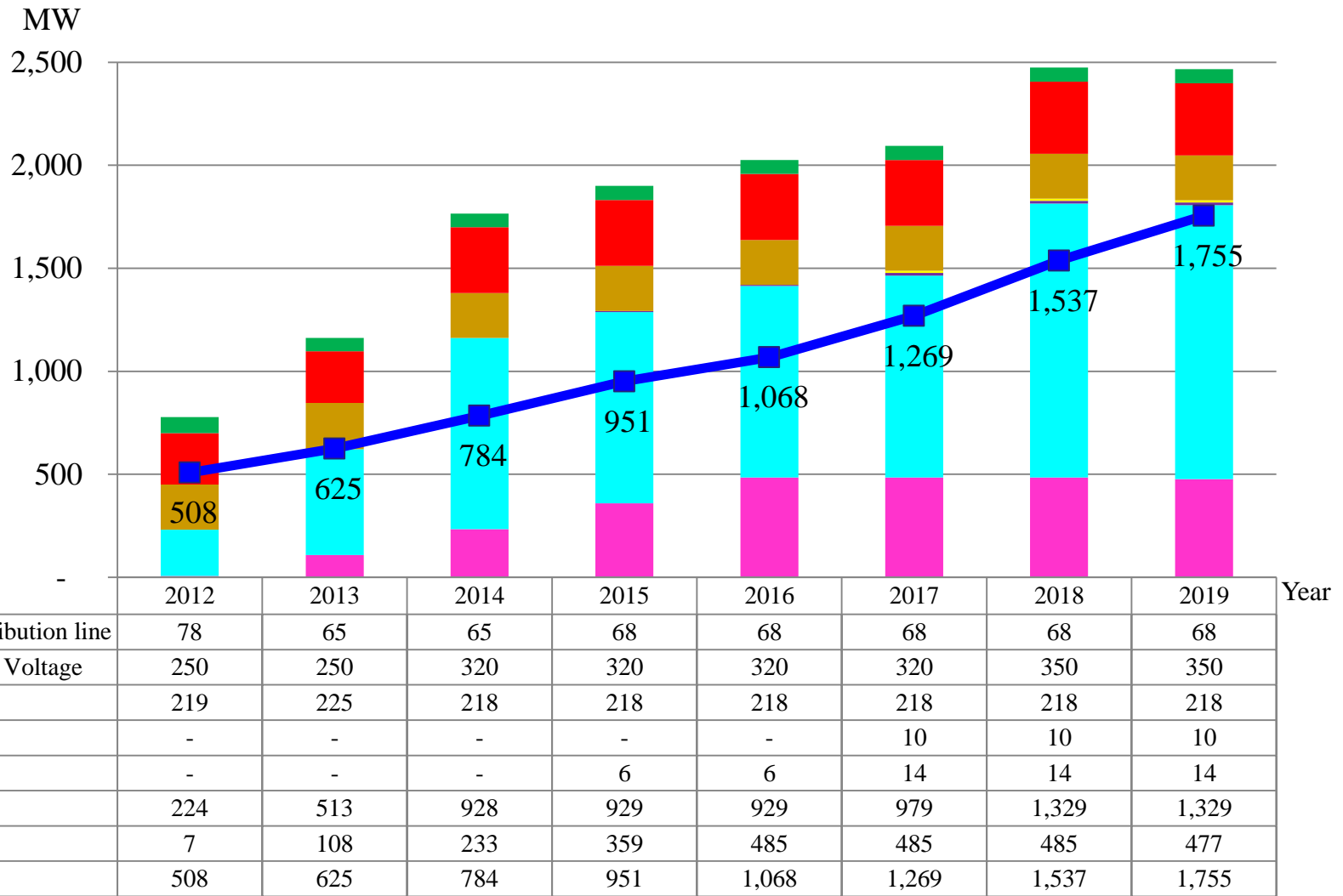
# Supply vs Demand 2012-2019 in Dry Season



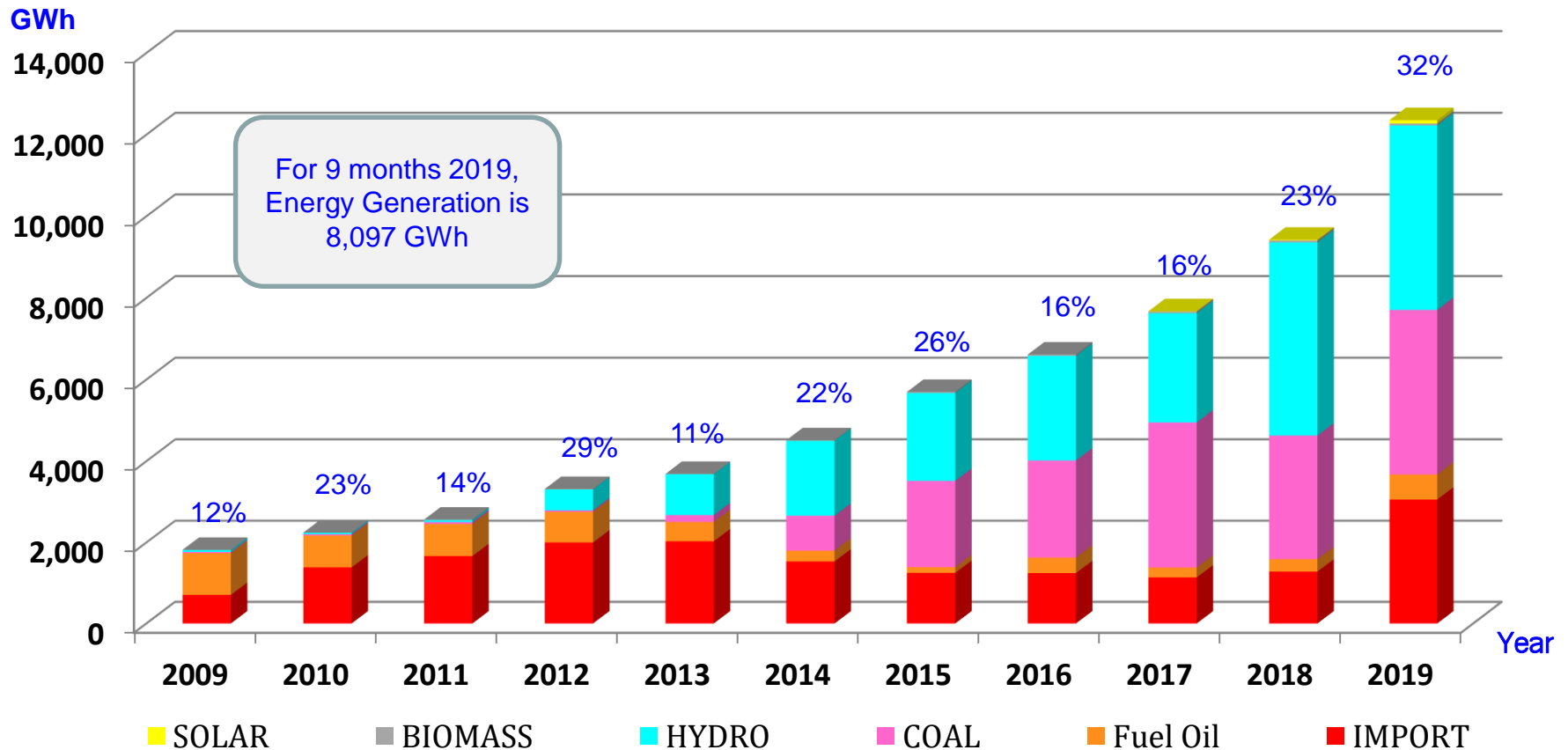
	2012	2013	2014	2015	2016	2017	2018	2019
Import Via Distribution line	78	65	65	68	68	68	68	68
Import Via High Voltage	250	250	320	320	320	320	350	350
Fuel Oil	219	225	218	218	218	218	218	218
Solar	-	-	-	-	-	10	10	10
Biomass	-	-	-	6	6	14	14	14
Hydro	90	205	371	371	371	391	531	450
Coal	7	108	233	359	485	485	485	485
Peak Demand	508	625	784	951	1,068	1,269	1,537	1,755

Year

# Supply vs Demand 2012-2019 in Rainy Season

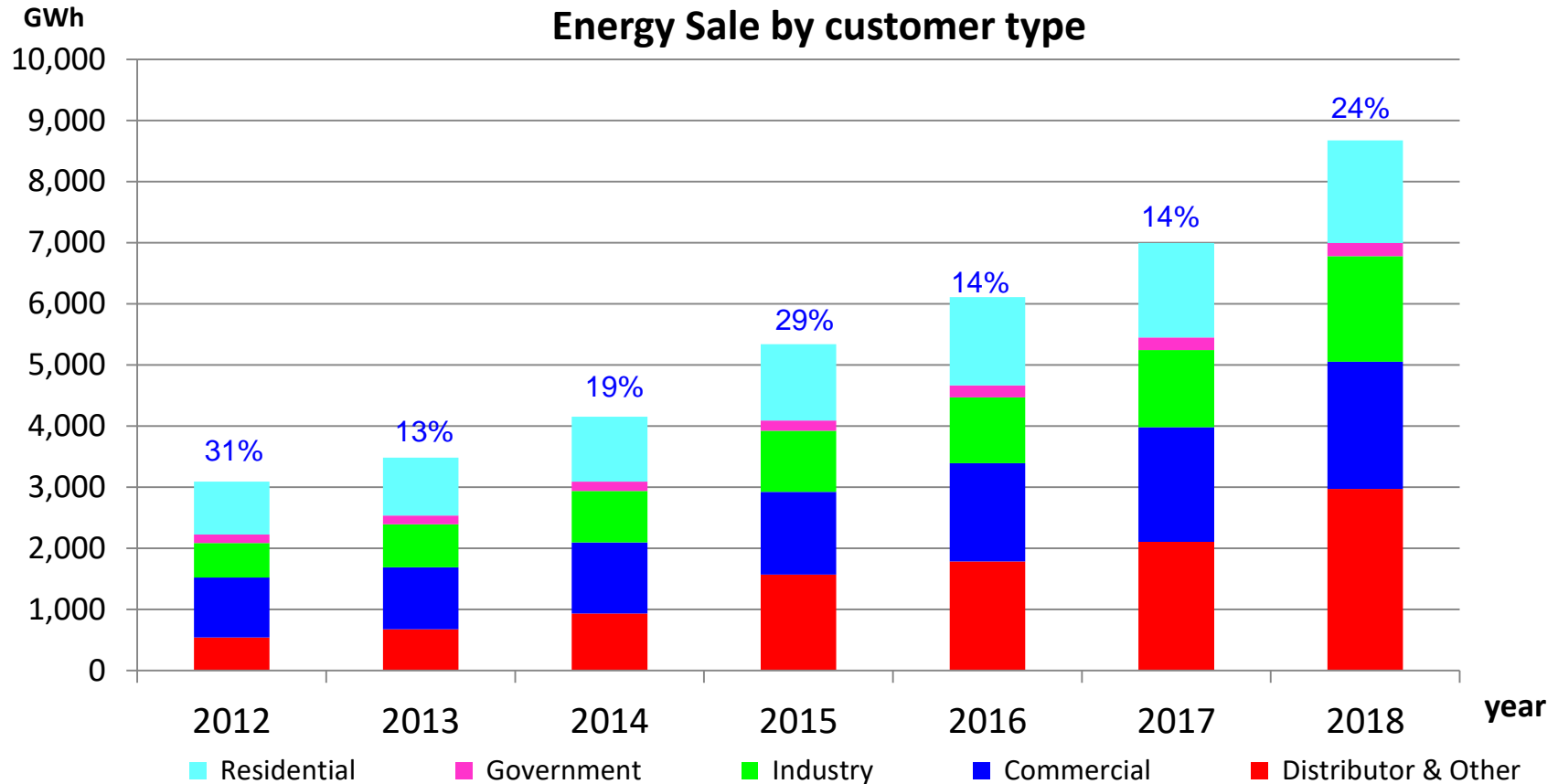


# Energy Generation by Fuel Type in EDC's System



Year	Unit	2011	2012	2013	2014	2015	2016	2017	2018	Plan 2019
<b>Energy Generation</b>	GWh	2,564	3,319	3,689	4,512	5,698	6,612	7,668	9,427	12,355
<b>Growth Rate</b>	%	14%	29%	11%	22%	26%	16%	16%	23%	32%

# Energy Consumption and Customer

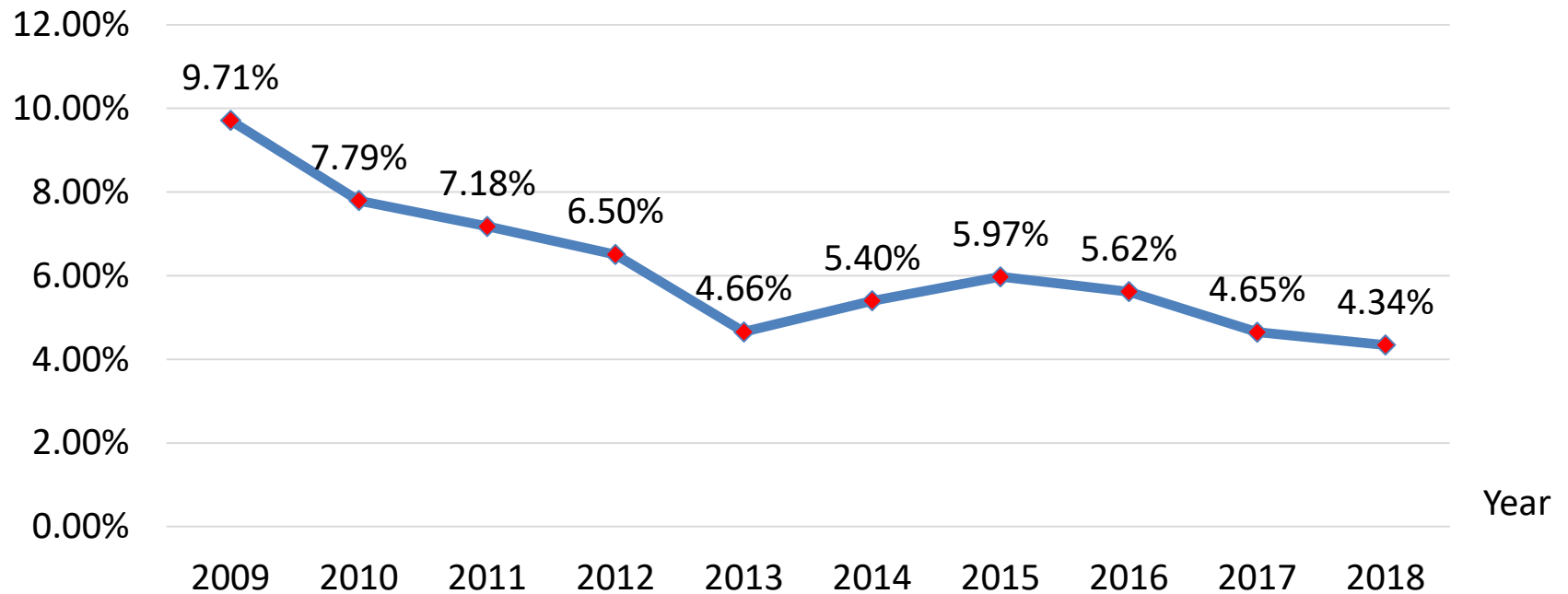


Note: Other is include Distributor (REE)

Type	Unit	2012	2013	2014	2015	2016	2017	2018
<b>Energy Sale</b>	GWh. (%)	3,091.11 (31.34%)	3,483.66 (12.70%)	4,151.73 (19.18%)	5,340.56 (28.63%)	6,110 (14.40%)	6,994 (14.46%)	8,675 (24.04%)
<b>Customer Number</b>	Conn. (%)	460,984 (10.27%)	502,859 (9.11%)	541,141 (7.59%)	774,613 (43.14%)	897,175 (15.82%)	987,346 (10.05%)	1,086,193 (10.01%)



# *Distribution Losses*



# Transmission Line

Transmission	Unit	2011	2012	2013	2014	2015	2016	2017	2018	2019
115 kV line	km	374	406	423	446	493	518	678	678	702
230 kV line (Double Circuit)	km	181	606	827	893	893	893	893	893	1006
115 kV Substation	Number/MVA	7/506	8/601	12/901	13/1,095	15/1,240	16/1,290	19/1,640	20/1,720	21/1,905
230 kV Substation	Number/MVA	3/466	6/606	9/1,206	11/1,440	12/1,790	12/1,790	13/2,115	15/2,481	16/2,821

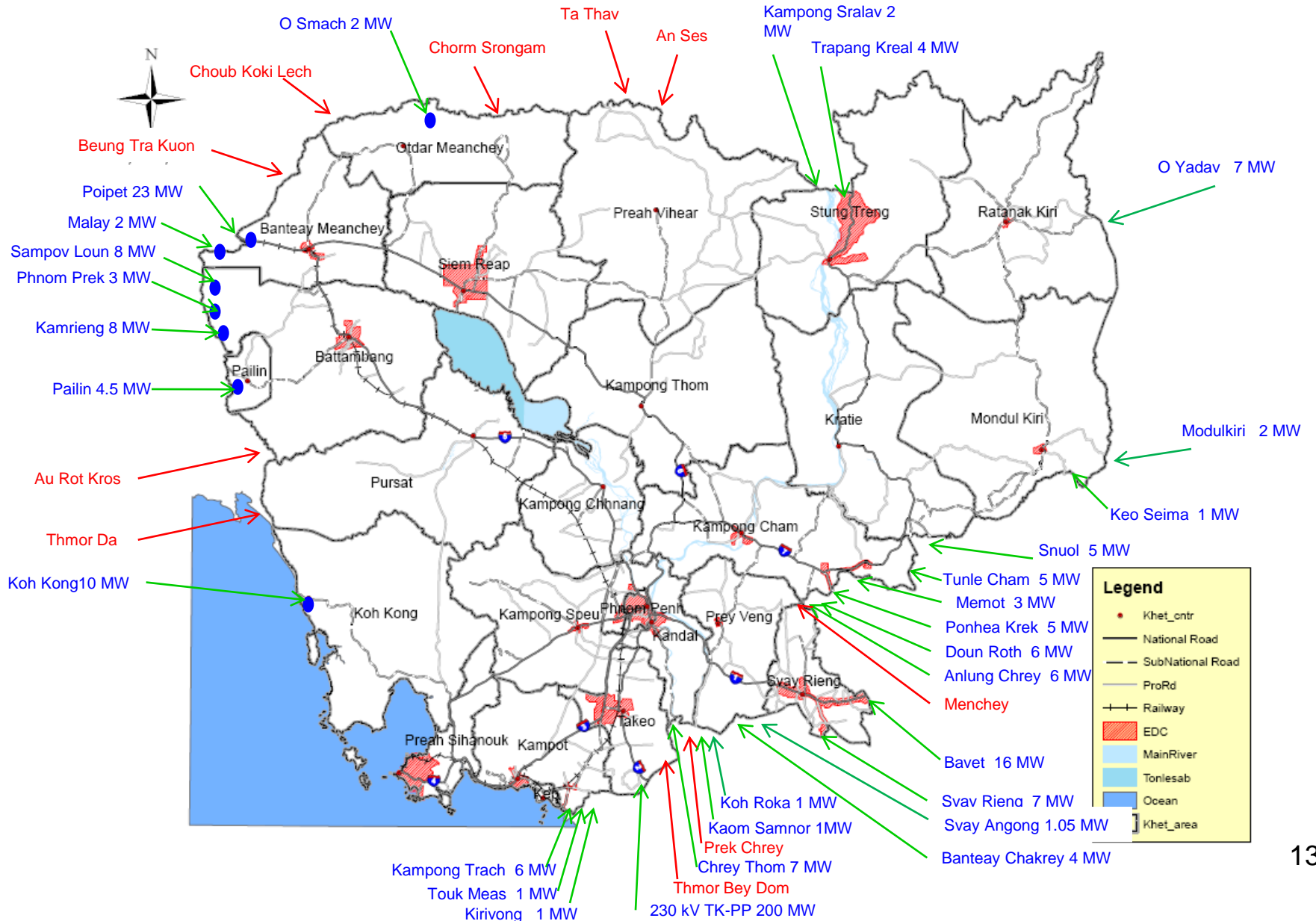
# Distribution Line

Distribution line		Unit	2012	2013	2014	2015	2016	2017	2018
MV	Underground cable	km	648	682	734	841	911	1,036	1,145
	Overhead line	km	3,267	5,257	6,623	6,742	10,625	12,589	14,473
LV	Underground cable	km	200	206	209	220	253	253	269
	Overhead line	km	2,685	3,071	3,273	3,820	4,338	5,673	6,595
Substation	MV/LV	Number	3,627	3,914	4,483	5,528	6,887	7,849	9,528
		MVA	1,561	1,712	1,812	2,424	2,662	2,887	3,445

# *Power Business with Neighbor Countries*

- With Thailand
  - Actual: 7 points of 22 kV cross border, 115 kV in 2007
  - Request For New Connection points:
    - 7 points of 22 kV and 35 kV cross border
- With Vietnam
  - Actual:
    - 19 points of 22 kV and 35 kV cross border
    - 230 kV in 2009
  - Request For New Connection points:
    - 3 points of 22 kV and 35 kV cross border
- With Lao PDR
  - Actual: 2 points at 22 kV and 1 points at 115kV
  - Other requests in progress
  - Present: Construct 500 kV(1<sup>st</sup> stage 230kV) in 2020-2021

# MV Connection Points from Neighboring Countries





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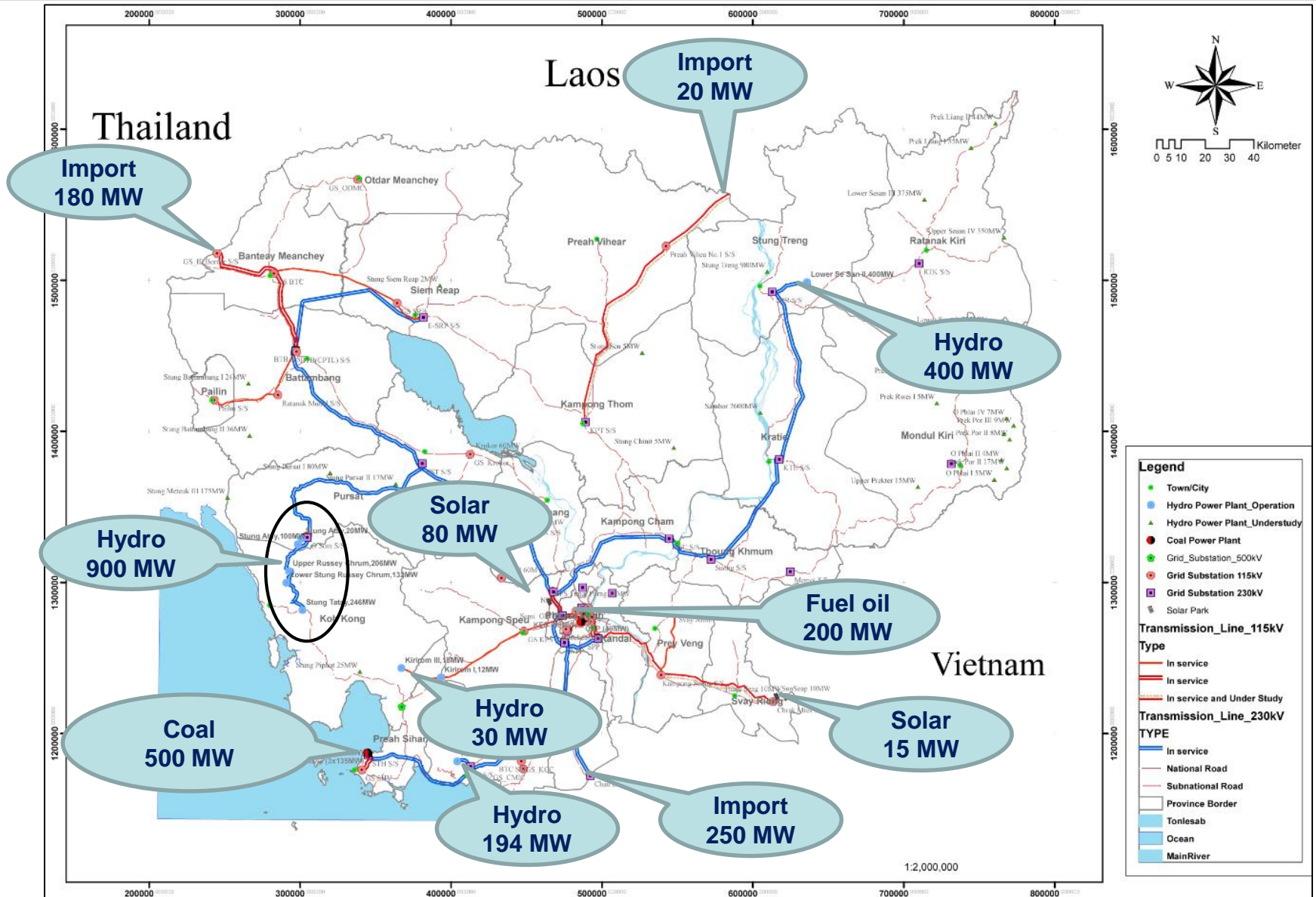
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## II. Future Development of Power Sector

# *Power Supply and HV Transmission Line*

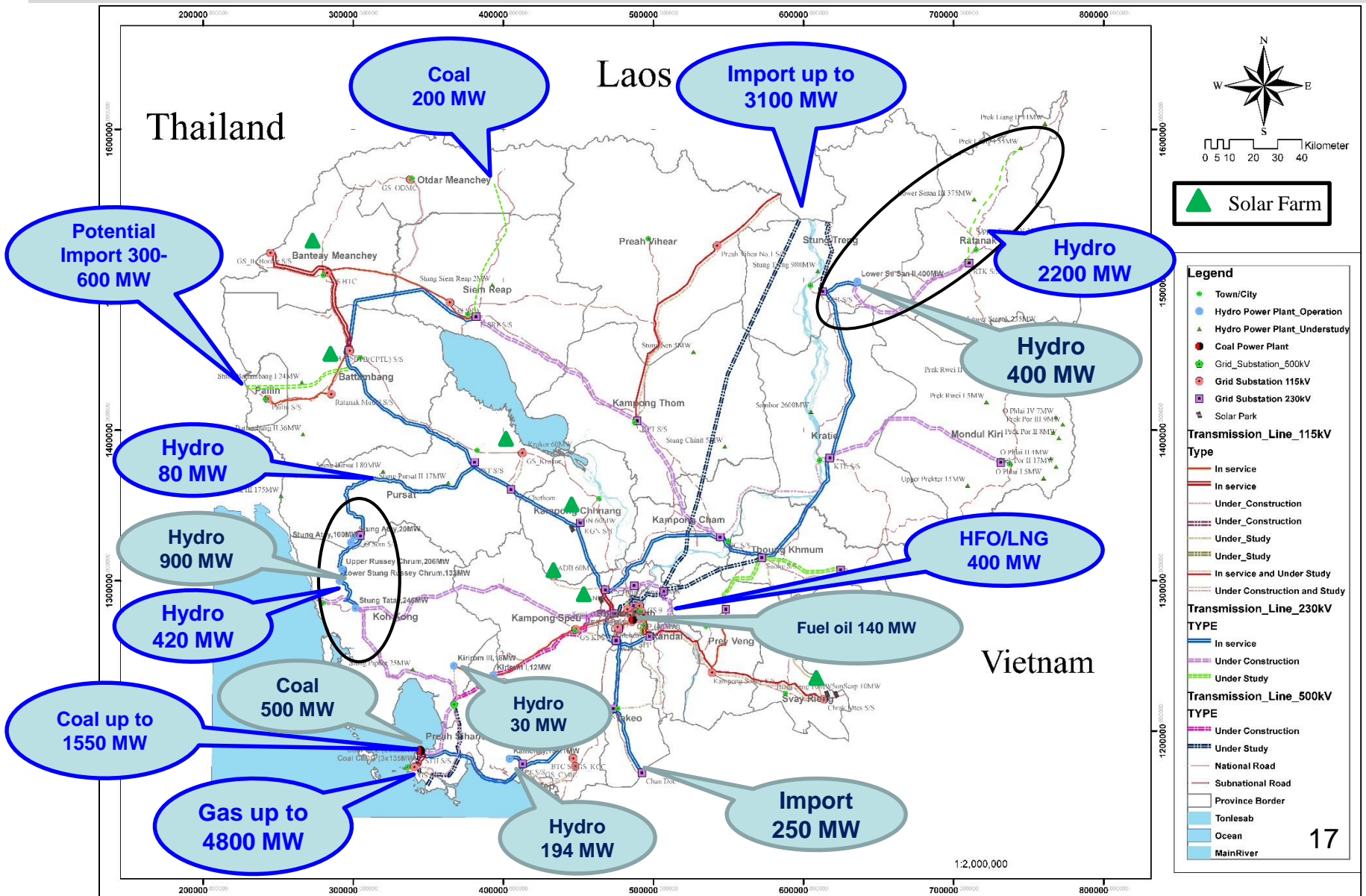
- Actual Power Sources in National Grid:
  - Fuel oil  $\approx$  200 MW
  - Hydro  $\approx$  1330 MW
  - Coal  $\approx$  505 MW
  - Solar Farm = 85 MW
  - Import via High Voltage  $\approx$  450 MW
- Future Generation Sources
  - CEL II coal 135 MW (at the end of 2019)
  - EDC's HFO/LNG 400 MW (2020)
  - Import from Hydro in Lao Don Shahong and Ath Tapeu 700 MW (2020-2023)
  - Coal 200 MW at Oddor Meanchey (2021-2022)
  - Solar Park 340 MW (2020-2022)
  - New Coal Power Plant 1400 MW (2022-2025)
  - Renewable, Solar Park, Wind, Biomass 580 MW (2022-2030)
  - Domestic Hydro Power Plant 2600 MW (2023-2030)
  - New LNG/CCGT Power Plant 4800 MW (2027-2030)
  - Import from Laos Coal Mine at Sekong 2400 MW (2024-2027)
  - Potential import from Thailand via 230kV line 300-600 MW (2022-2027)

# Actual Generation Power Transmission

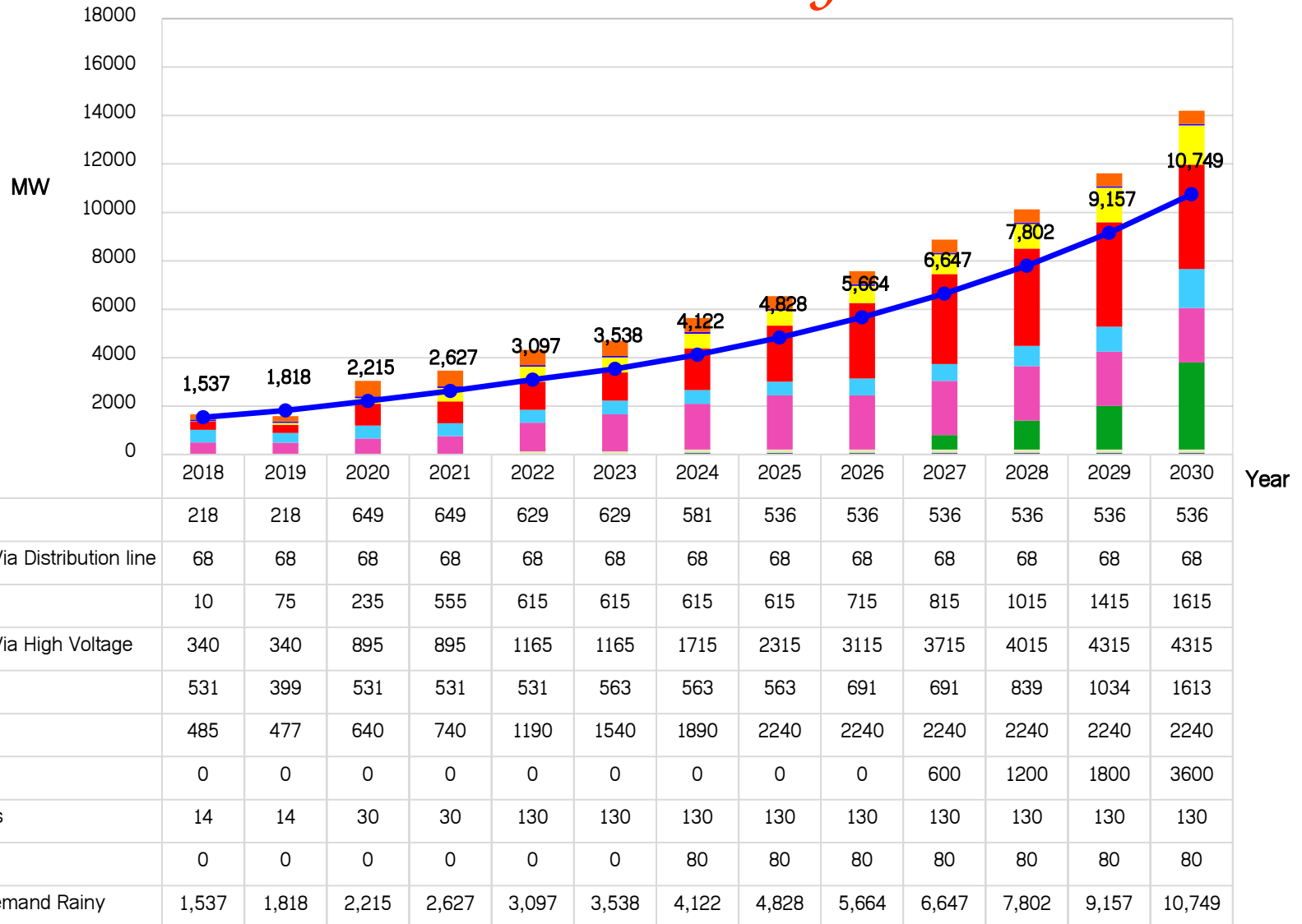




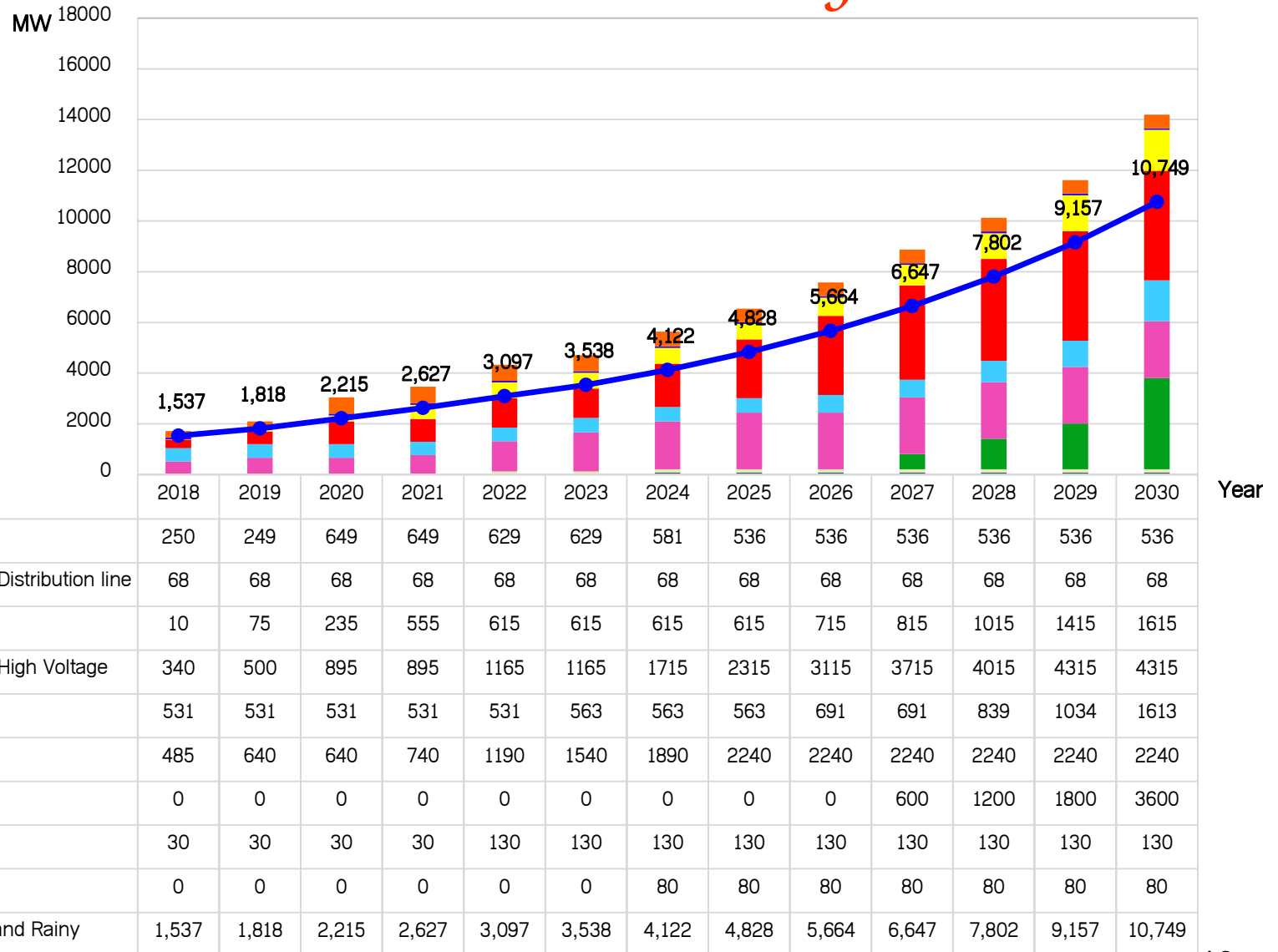
# Generation and Power Transmission Plan up to 2030



# Outlook Of Supply and Peak Demand 2019-2030 in Dry Season

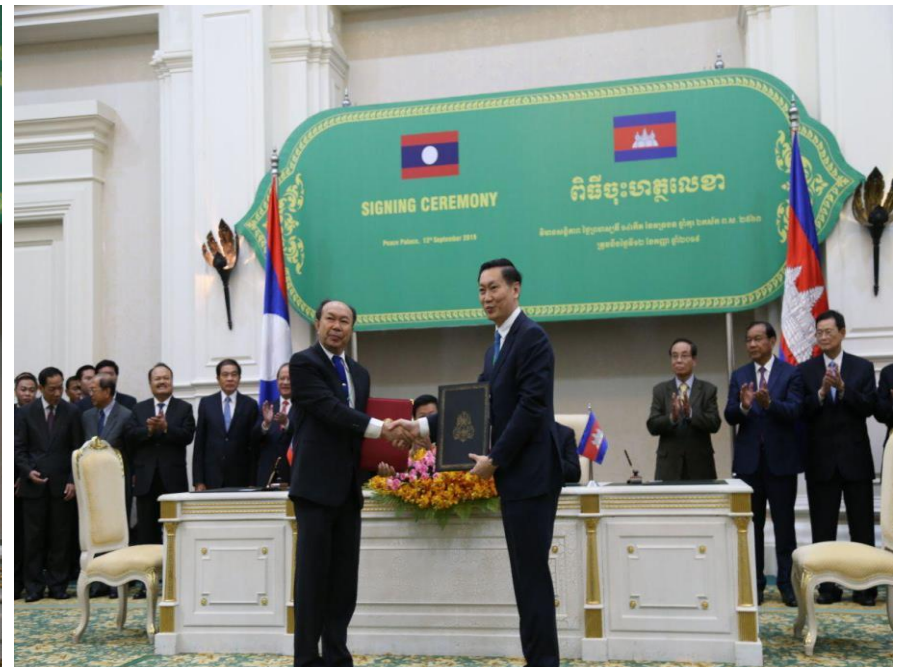
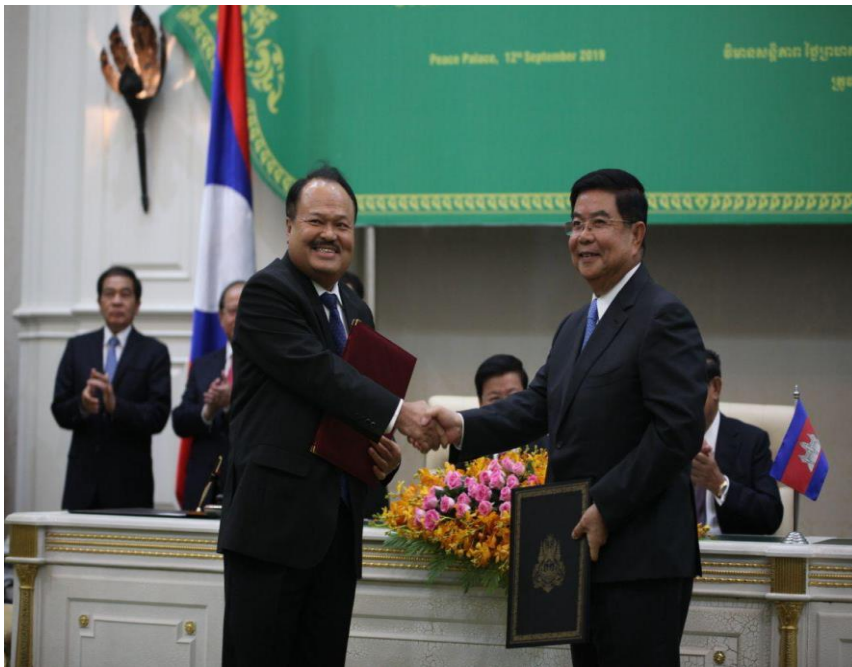


# Outlook Of Supply and Peak Demand 2019-2030 in Rainy Season



Note: the hydro power can generate only 40% of their capacity during dry season

Source: Power Development Master Plan



- Agreement on Energy Cooperation between the RGC and Lao PDR signed by both ministers on 12 September 2019.
- Power Purchase Agreement (PPA) 500MW between EDC & EDL on 12 September 2019.
- Power Purchase Agreement (PPA) 600MW between EDC & TSBP Sekong Power and Mineral Company Limited on 12 September 2019.
- Power Purchase Agreement (PPA) 1,800MW between EDC & Xekong Thermal Power Plant Company Limited on 12 September 2019.



**Thank You**

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