One day Seminar on:

Taking Nepal's Energy Sector forward to International Best Practice

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Organized By: AIT Alumni Association Nepal (AITAAN)

Patronage: Government of Nepal, Ministry of Energy, Water Resources and Irrigation

Cross-border electricity trade in BBIN region: Clarifying the existing scenario and way forward

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Electricity trade in the context of regional frameworks

- ASEAN ⇨ Slow but moving (APG)
- GMS ⇨ Better than the rests in SE and S Asia
- SAARC ⇨ Dead for the time being !!
- BIMSTEC ⇨ New push – we wait and see
- BBIN ⇨ Huge possibilities for progress
  Some positive developments

GMS: Cambodia, China, Laos, Myanmar, Thailand, and Viet Nam
BIMSTEC: Bangladesh, India, Myanmar, Sri Lanka, Thailand , Nepal and Bhutan

What CBET infra do we have?

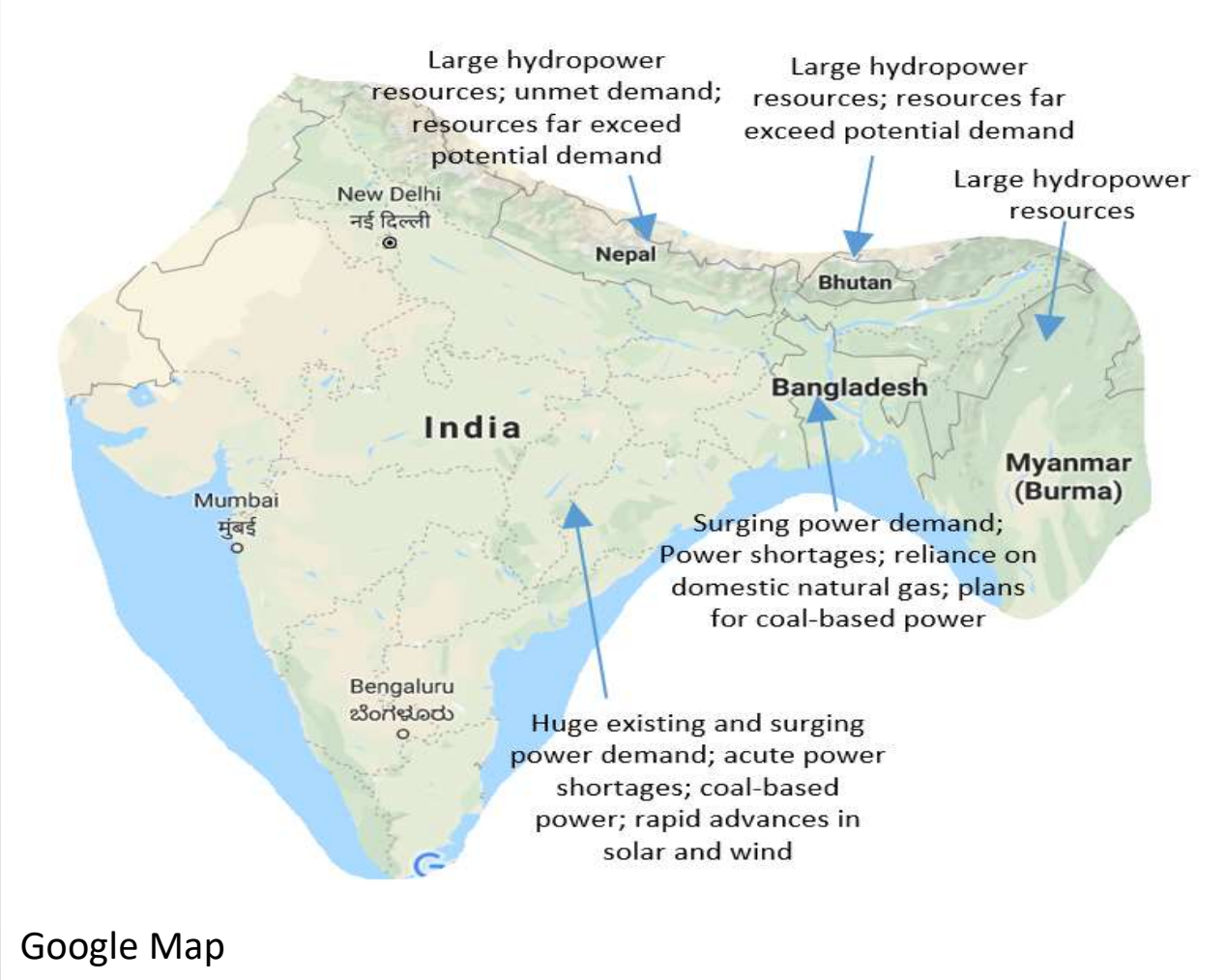
- GMS → 8 cross border connections with combined capacity of 3,215 MW (incl Yunan and Guanxi)
- APG → 9 cross border connection with combined capacity of 5,200 MW
- Lao – Thailand – Malaysia (Thailand wheeling) 100 MW
- BBIN region CBET infrastructure: About 2,400 MW
  - India → Bangladesh: 660 MW capacity, 4.7 bn unit (2017)
  - India → Nepal: 520 MW capacity, 2.58 bn unit (2017)
  - Bhutan → India: 1,416 MW, 5.7 bn unit (2017)

Questions

- Do this region benefit from power trade?
- Do we have enough electricity to sell in the near future?
  - How much electricity we need ourselves?
  - How much can we produce?
  - What are other benefits (economic and political/strategic?
- Why CBET not happening much?
- Lessons from other region, especially ASEAN region
- What to do in BBIN region to push CBET?

Do this region, BBIN, benefit from power trade?

Peculiarities of Eastern South Asia

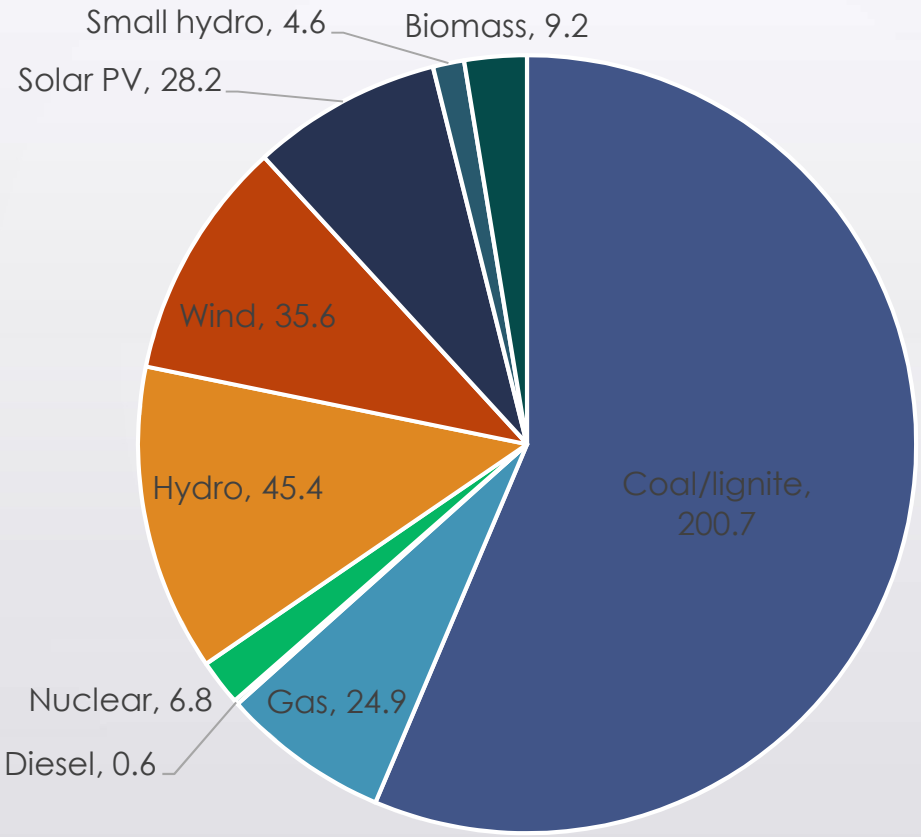


Google Map

Country	Electrification rate, %						Population without access	Electricity consumption *per capita***	Installed capacity***
	National				Urban	Rural	Millions	KWh	GW
	2000	2005	2010	2016	2016	2016	2016	2015	2015
India	43	58	66	82	97	74	239	859	298[1]
Nepal	15	35	76	77	97	72	7	138	0.8
Bangladesh	20	34	47	75	90	67	41	326	8.6
Bhutan*	35	60	73.3	100	100	100	0	2,572[3]	1.5
Myanmar	5	12	49	59	79	43	22	249	5.39[2]
Developing Asia	67	74	83	89	97	81	439	-	
World	73%	76%	82%	86%	96%	73%	1,060	3,052	

IEA (2017)
*World Development Indicator (2018)
** IEA (2017b)
*** SARI (2017)
[1] **India: 356 GW installed capacity by 30 March 2019** (200.7 GW coal/lignite, 24.9 GW gas, 0.64 GW diesel, 6.78 GW nuclear, 45.4 GW hydro, and 77.6 GW renewables (of which: 4.6 GW small hydro, 35.6 GW wind, 9.24 GW biomass, 28.18 GW solar)). See http://www.cea.nic.in/reports/monthly/installedcapacity/2019/installed_capacity-03.pdf
[2] Figures for 2016; hydro 60.4%, gas 35.6%, coal and diesel 4% (Ministry of Electricity and Energy (MOEE), 2017)
[3] Figures for 2012 based on SARI (2016)

Installed Capacity in India, GW



Total installed capacity
356 GW
(by 30 March 2019)

See http://www.cea.nic.in/reports/monthly/installedcapacity/2019/installed_capacity-03.pdf

The BBIN context

- Demand will grow
  - Bangladesh's peak power demand is expected to grow by 8.6% (2010–2030), reaching about 33.7 GW → Depleting gas reserves are adding pressure to the power sector in Bangladesh
  - India's 19th Power Survey (2017) show 5.8% average growth in power demand in 2017– 2027
- Need for clean electricity
  - Dominant fossil fuel in power Mix: Coal 56% of installed capacity in India (2019 March); in Bangladesh, 62% was gas and 29% oil in 2016 (SARI, 2017) → Bangladesh is shifting to coal
  - If India and Bangladesh are not able to harness clean electricity, they might be forced to rely on coal

The BBIN context

- Bhutan has harnessed only about 1,600 MW of hydropower out of its 24 GW economic potential
  - → about 70-75% of electricity sold to India. Unlike in Nepal, in Bhutan domestic demand in the future is expected to be small.
- Falling cost of solar may reduce the need for CBET to some extent for India (solar+wind = about 64.8 GW, March 2019) BUT raise value of storage hydro
  - → however, the intermittent nature and expensive storage could make cross-border power attractive to (a) balance loads (b) avoid peak load plants, as well (c) raise price of 'unscheduled' spontaneous hydro electricity.

Nepal in BBIN context

- Nepal: Starting 2019/20, Nepal is 'expected' to have surplus electricity for export in the wet season while some import in peak hours from India.
- Installed capacity 1,152 MW (591.4 NEA, 560.8 IPPs) (FY 2018/19)
- At this time, 1,017 MW of NEA and 2,500 MW of IPP hydropower plants are **under construction** (after financial closure) (NEA, 2017/18; Ministry of Energy, 2019 AIT Seminar)
- 2,600 MW **planned and proposed (PPA concluded)** (NEA, 2017/18)
- 5,600 MW IPP installed capacity (PPA Processing) (MoE, AIT Seminar)
- **Total expected capacity** of about 10 GW by 2026 (SARI, 2017; ICIMOD, 2018).

How much do we trade in BBIN?

- Bhutan
  - Sells 70-75% of its produced electricity to India; sold 5,044 million KWh in 2014 (SARI, 2016)
  - The Bhutan–India agreement assures a minimum of 5,000 MW electricity import commitment by 2020 by India (Singh et al ., 2015).
  - The export price is relatively low, at Indian rupees (INR) 2.55/KWh (revised from 2.25 in 2017).

How much do we trade? Nepal

- Import from India was 37.7% of Nepal's total electricity sell (+ loss 20%) in FY 2017/18, i.e. 2.58 bn unit → with max power imports of 521 MW in April/May 2018 (Nepal Electricity Authority, 2017/18) → Paid 19.37 billion NPR

2.813 bn unit in 2018/19

- Nepal's imports mostly occur during peak hours in the evening, although there is also a small amount during daytime during the dry season.
- The NEA has power purchase agreements (PPAs) with NTPC Vidyut Vyapar Nigam (NVVN) (which acts as the nodal agency of India for power trading with Nepal).

How much do we trade? Nepal

- Average price of imported electricity from India was 7.36 NPR/KWh in 2017 (see NEA, 2017, for price differentiation)
  - The 11th Power Exchange Committee meeting (8 August 2017) fixed the power exchange rate at INR 5.55, 6.00, and 6.45 at the 132 kilovolt (kV), 33kV, and 11kV voltage levels, respectively, and stopped the annual escalation rate of 5.5% that was agreed previously.
- Within the next year, Nepal is expected to nominally import, during the dry season, but able to sell a large surplus of electricity

How much do we trade in BBIN?- Bangladesh

- Started in October 2013 → Bangladesh importing about 600 MW (Singh et al ., 2018).
- Power from India has helped to reduce load shedding in Bangladesh since 2013
  - The max load shedding was 1,048 MW in financial year (FY) 2013 and this had reduced to 307 MW in FY 2015 (SARI, 2016b).
- (SARI, 2017b) predicted 26 and 64 GW demand by 2030 and 2045 in Bangladesh, respectively,

How much do we trade in BBIN?- Bangladesh

- Price of imported electricity is lower than the average power purchase cost in Bangladesh.
- Imported electricity saved $500 million (SARI, 2016b) to Bangladesh Power Development Board (BPDB)
- In early 2018, India's NVVN won a BPDB contract to supply an additional 300 MW electricity to Bangladesh, at an estimated tariff of INR 3.42/KWh

Cross-border transmission capacity in BBIN (as of August 2019)

- **Nepal–India: 550 MW under operation (800 MW when M-D is fully charged) → 3,000 MW under planning → 25,000 Perspective Plan**
  - Six 132 kV or higher interconnections, capable of 550 MW trade, including a few smaller border town exchanges at 11 or 33 kV lines (NEA, 2017). The Dhalkebar–Muzzaffarpur Link has the potential to expand up to 1,200 MW through charging up to 400 kV
- **Bhutan–India: 1,350 MW under operation → 2.900 MW under construction → 23,500 Perspective Plan**
  - Transmission capacity corresponds to export capacity of the Tala, Chukha, and Kurichhu.
- **Bangladesh–India: 1,160 MW under operation → 340 under construction → 1,000 MW under Planning**

NEA, 2019 (AIT Seminar)

The benefits of electricity cooperation in BBIN- the rosy picture

- For resource-starved Bangladesh import electricity is cheaper than any other local options, except coal (SARI, 2017b)
- Bhutan could export 52 billion units by 2030 and 90 billion by 2050- this means, per capita earnings from electricity export could rise 29 times in 2012-2035 (SARI, 2016)
- Could reduce the use of thermal power plants in India and Bangladesh for better environment (Timilsina et al ., 2015; UN-DESA, 2006; Wijayatunga et al ., 2015).
- Nepal could earn export revenue as high as NPR 310 billion in 2030, which could further increase to NPR. 1,069 billion by 2045 (SARI/ EI (2016a).

Benefits of grid/electricity market integration

Reduction of electricity cost

- Short term energy and operating costs
- Long term capacity investment costs

(Timilsina et al., 2015)

Environmental benefits

- Reduced emissions
- Reduced regional and local air pollution
- Paris Agreement

(UN-DESA, 2006)

Economic benefit

- Increased economies of scale as a result of larger market reach by larger plants

World Bank (2008)

Energy security

- Enhanced supply scenario (better reliability, stability & security due to import during contingencies)

(Lama, 2016; ECA, 2009; UN-DESA, 2006).

Political benefits

- Strengthening of mutual confidence and increased interdependence among the partner countries

(ECA, 2009; UN-DESA, 2006)

Capacity development

- Bolstering of the participant country's legal capacity and experience

(ECA, 2009; UN-DESA, 2006)

Benefit to local community

- Growth local economy during infrastructure construction

(ECA, 2009)

Social Development

- Socio-development as the result of expanded electrification

(ECA, 2009

Dhakal, et al. (2019)

Benefit of regional grid

- **Reduced cost of electricity** in short term energy and operation costs as well as long-term capacity investment cost (due to shared reserve margin and avoided investment, especially in peaking plants)
- **Seasonal complementarity** in power systems in South Asia (monthly electricity load profiles across South Asian grids)
- **Greater economic integration in the region** → Electricity as a stepping stone and a model of cooperation → strengthening of mutual confidence and increased interdependence among the countries

Seasonal complementarity in power systems in South Asia

Sources: Authors' calculation based on CEA (2014) (India); Ali, Iqbal and Sharif (2013) (Pakistan); Kunwar (2014) (Nepal); Bangladesh Power Development Board (2013) (Bangladesh).

Timilsina et al. 2015

Monthly Electricity Load Profiles across South Asian Grids

Additionally, there are daily load compatibility too !!

Benefits of regional grid

- **Electricity import could be more economical for countries such as Bangladesh and India**, additionally complement intermittency of solar and wind, substantial economic and environmental benefits
- **Big source of revenue for countries such as Bhutan and , Nepal**
  - Bhutan: 10-15% of GDP from electricity sell (SARI, 2016, others)
  - Nepal: Huge surplus expected to export

Aims and plans in BBIN sub-region

- **BIMSTEC**: 7 member signed MOU to explore electricity market in 2018
- **Bangladesh signed MOU** with NVVN (India) to import 300-500 MW from Nepal's Upper Karnali
- **India's national power plan** envisages 10,000 MW import by 2026/27
- **Bhutan-India MOU** to develop capacity to expand transmission link up to 10,000 MW export in coming years
- **Bangladesh's national power plan** envisages 9,000 MW import by 2030
- **Bangladesh Nepal signed MOU** for power trade in 2018
- **Bangladesh, India and Bhutan** discussing to develop 1,125 MW Dorjilung Hydropower in Bhutan

Conducive environment? Good Bangladesh-India relation; political stability in Nepal; Stable Bhutan-India relation; India 'seems' willing than before

Why electricity trade is slow in South Asia?

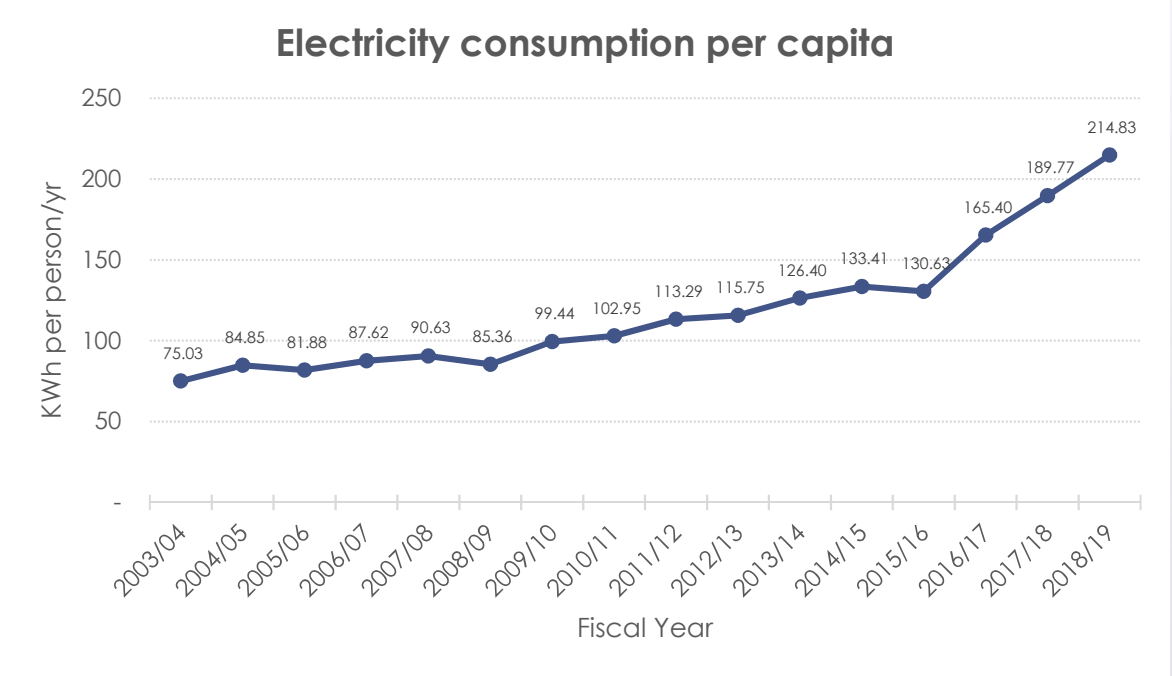
Why not happening then in South Asia !! Obstacles

- **Regional** → geopolitics, lack of trust, standardization, coordination, and risks and uncertainties on benefits/costs
- **National** → Less capacity (negotiating, financial), sense of intimidation by giant neighbor, lack of local consensus, politicking
- **Chicken-and-egg problem** → No market guarantee– no adequate generation- limited cross-border transmission links – bottlenecks in the domestic energy infrastructure - uncertainty
- **Absence of competitive power market** → all G-to-G experiences
- **Institutional constraints** – no clear vision of regional market
- **Most importantly, the long-standing political disputes and mindsets between countries**

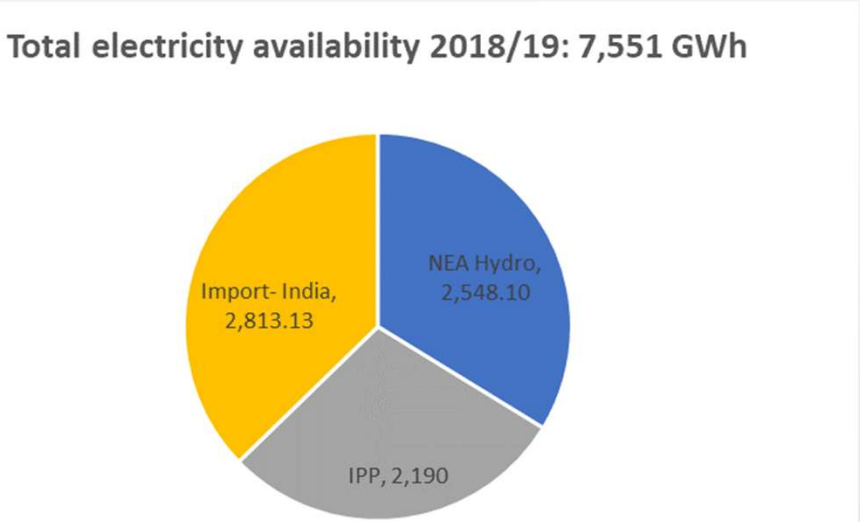
Will Nepal have power to sell under multiple growth paradigms?

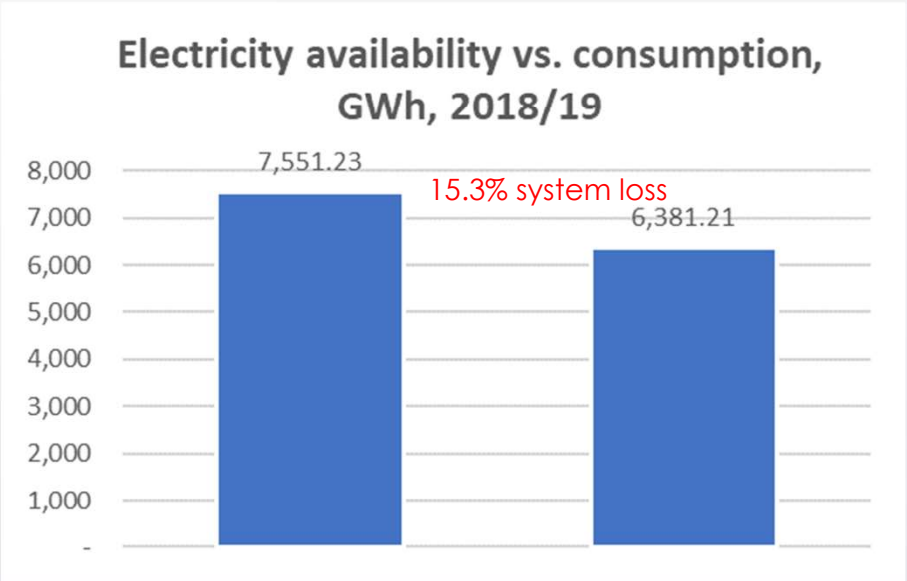
Nepalese context

- Nepal Electricity Authority's forecast is around 4,500 MW by 2026.
- Existing (1,142 MW by Falgun of FY 2075/76)
- Ambition to bring total capacity to about 10,000 MW by 2026 (SARI, 2016a).
- 2018 White Paper on MoEWRI:
  - 2023: 5,000 MW (7OO Kwh/p)
  - 2028: 15,000 MW (1,500 Kwh/p) – (out of this, 5000 MW for export)

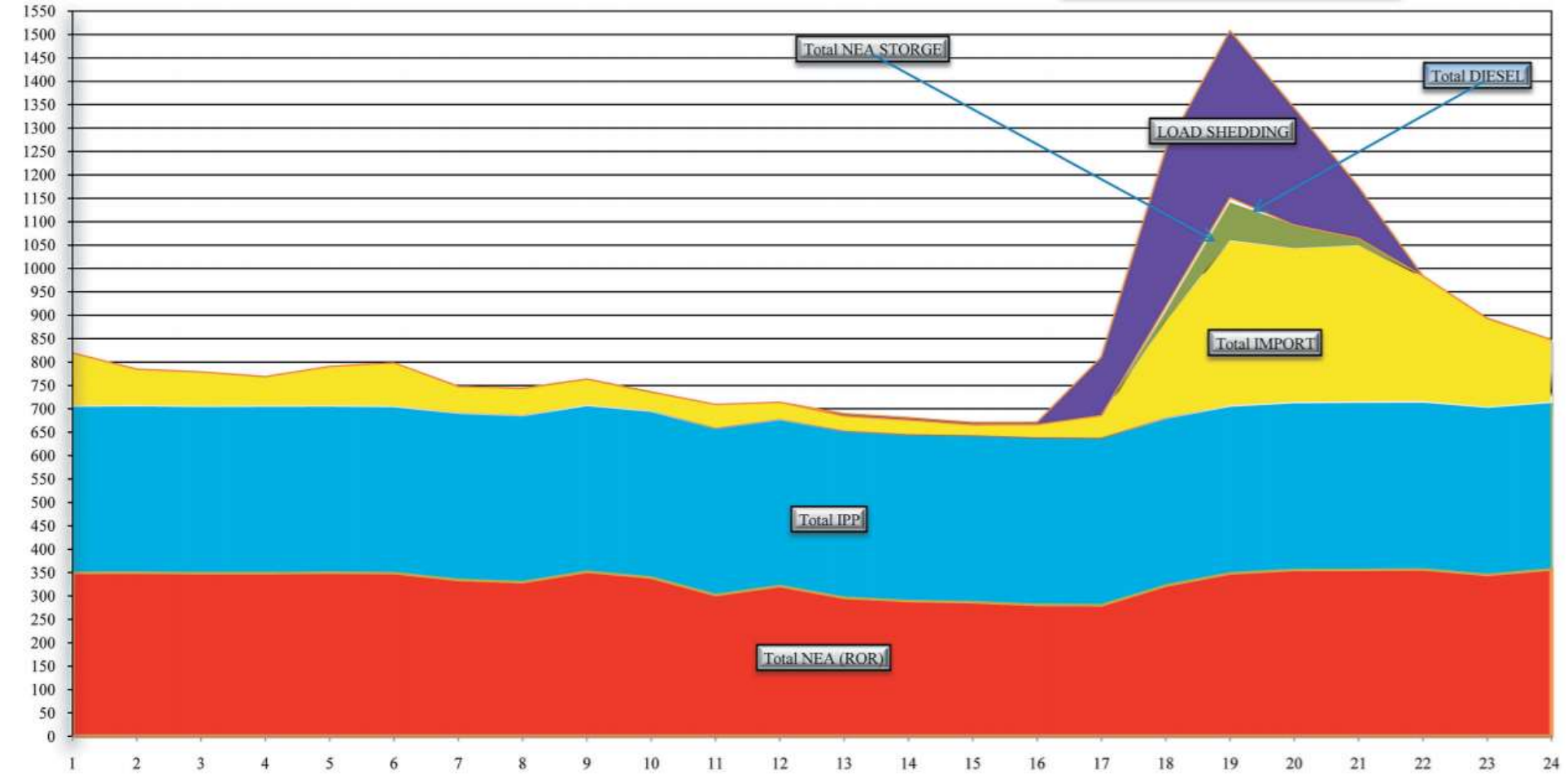


NEA Annual Reports





System Load Curve of the Peak-Load-Day in 2017/18- 19 October, 2017 (1508.16 MW at 18.35 hrs)

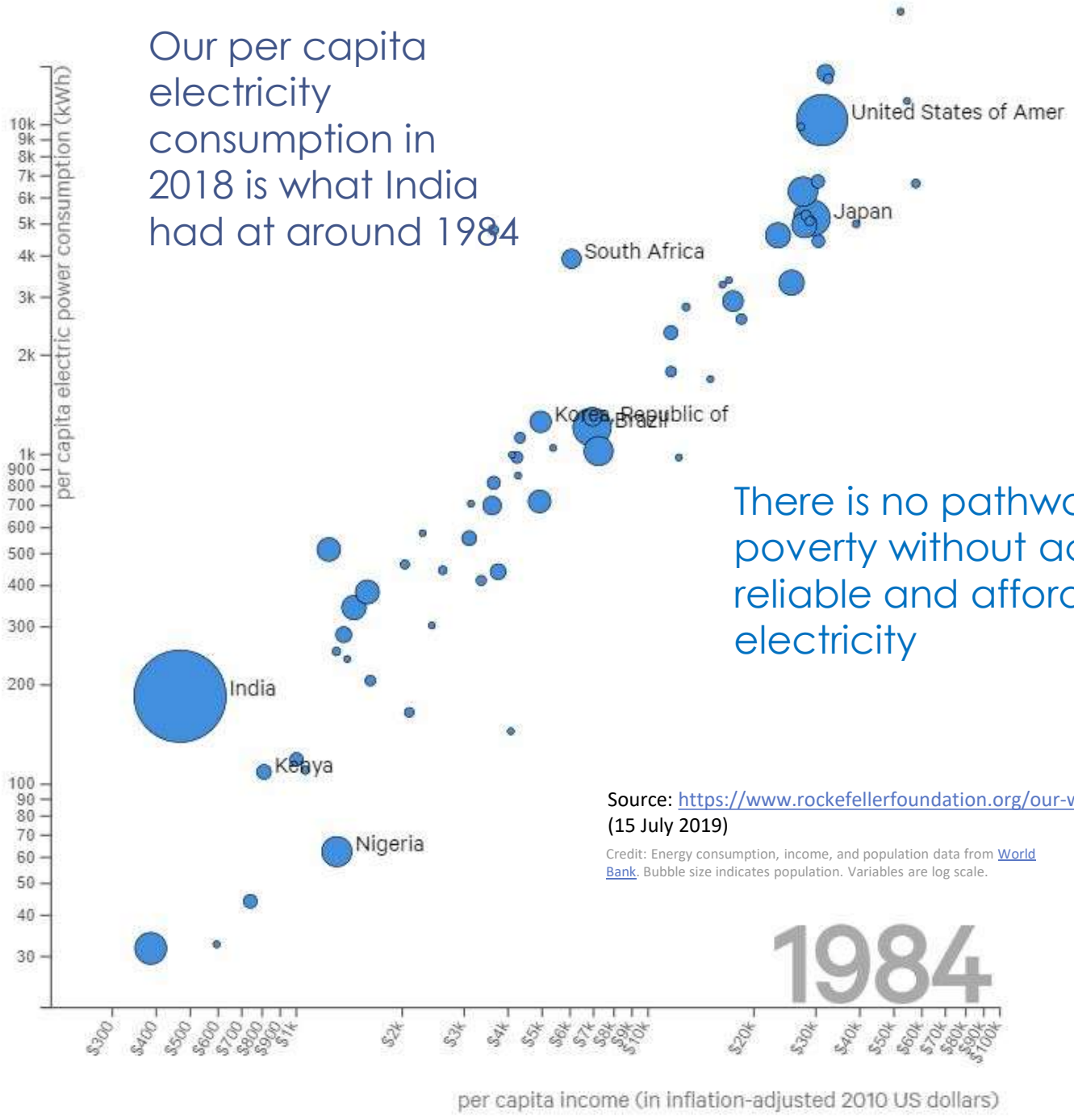


Nepal's expected electricity export scenario in the near future

- 2019/20 (without upper Tamakoshi) → Energy Banking and import → Net importer
- 2020/1 – 2027/28 → Energy Banking and export → Net exporter
- 2028/29 onwards → Export only (may be occasional banking) → Exporter only

(NEA, 2019)- AIT Seminar

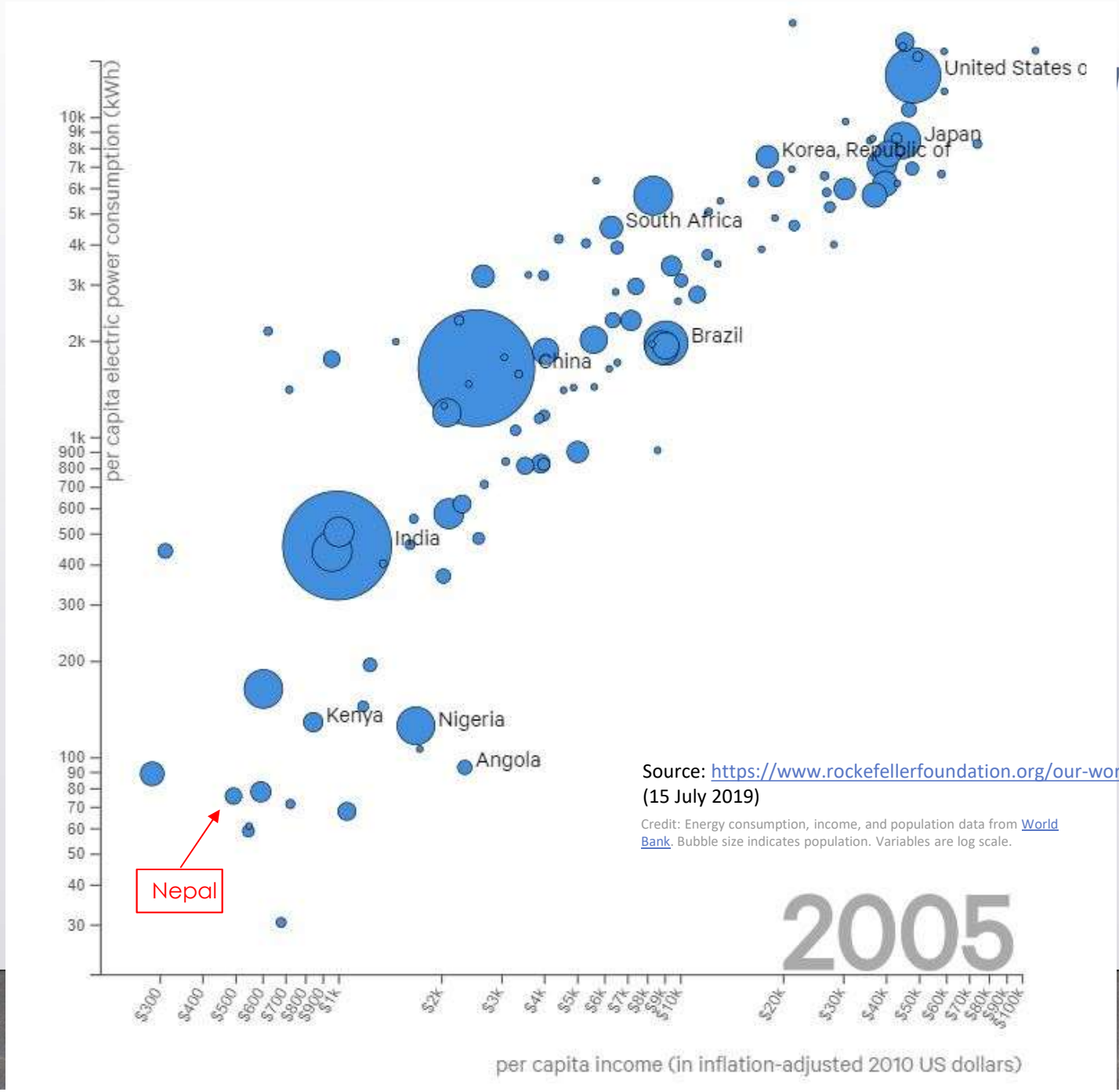
Our per capita electricity consumption in 2018 is what India had at around 1984



There is no pathway out of poverty without access to reliable and affordable electricity

Source: https://www.rockefellerfoundation.org/our-work/initiatives/e-guide/ (15 July 2019)

Credit: Energy consumption, income, and population data from World Bank. Bubble size indicates population. Variables are log scale.



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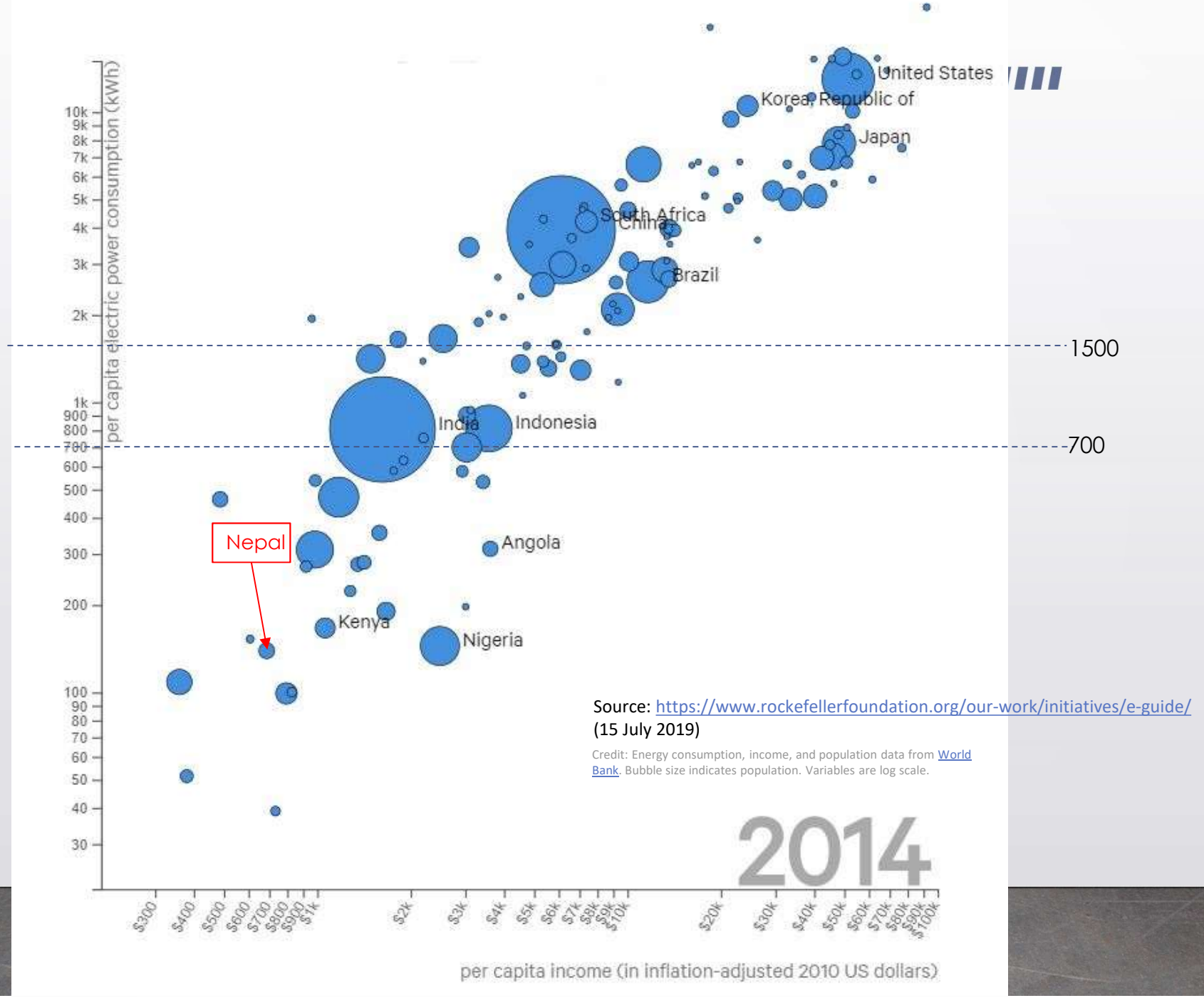


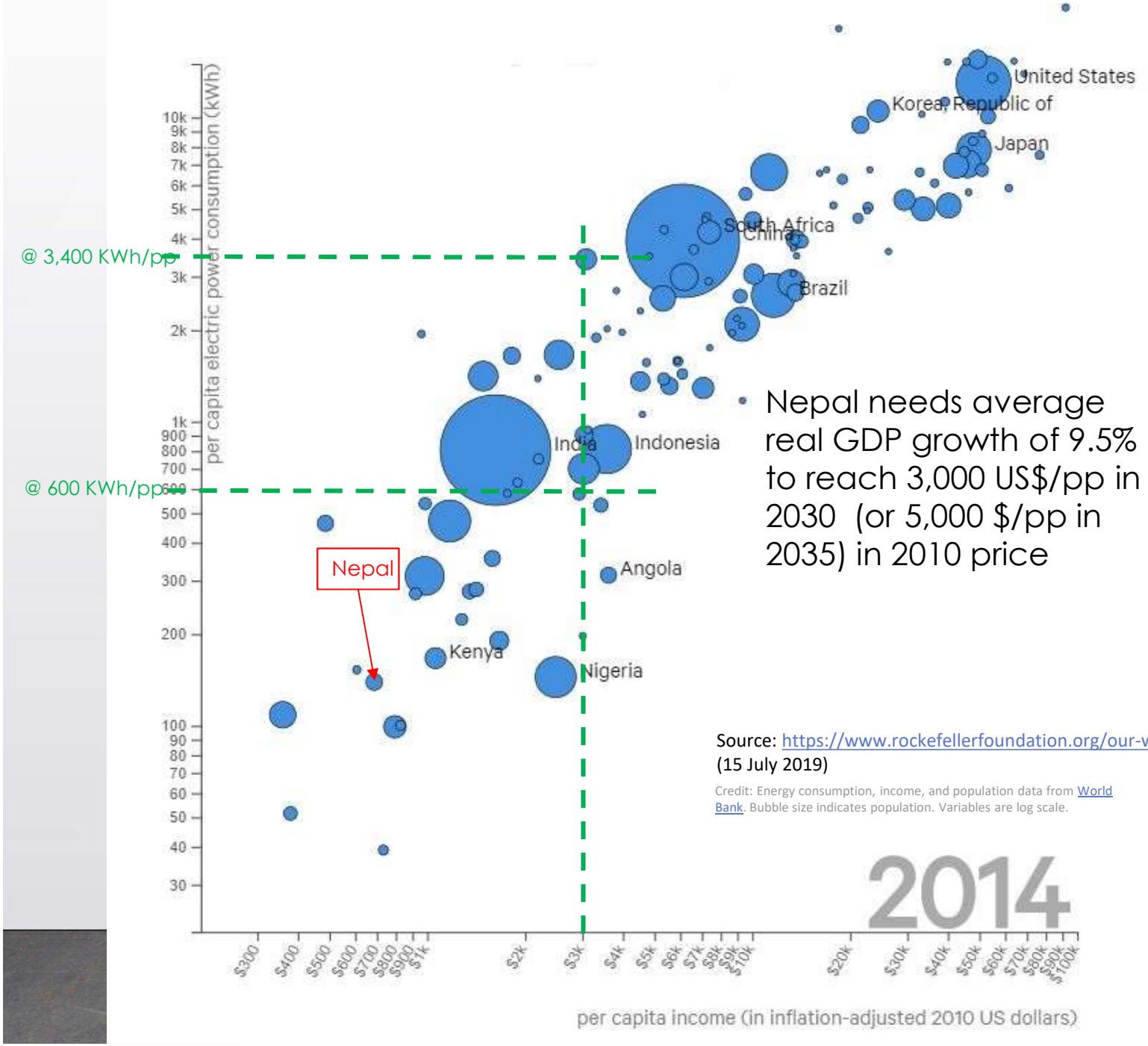
Source: https://www.rockefellerfoundation.org/our-work/initiatives/e-guide/ (15 July 2019)

Credit: Energy consumption, income, and population data from World Bank. Bubble size indicates population. Variables are log scale.

What this means?

- 2018 Energy availability: 7,058 GWh
- 2018 Electricity sell (consumption): 5,557 GWh @ 188 KWh/pp
  (with 29.3 mn population)

- Say we have 7% real GDP growth → we hit 2,000 $ per capita GDP by 2030 (2010 price)
- Say we have 9.5% real GDP growth → we hit 3000 $ per capita by 2030 (2010 price)
- Say we have 12% real GDP growth → we hit 5000 $ per capita by 2030 (2010 price)



Nepal needs average real GDP growth of 9.5% to reach 3,000 US$/pp in 2030 (or 5,000 $/pp in 2035) in 2010 price

Source: https://www.rockefellerfoundation.org/our-work/initiatives/e-guide/ (15 July 2019)

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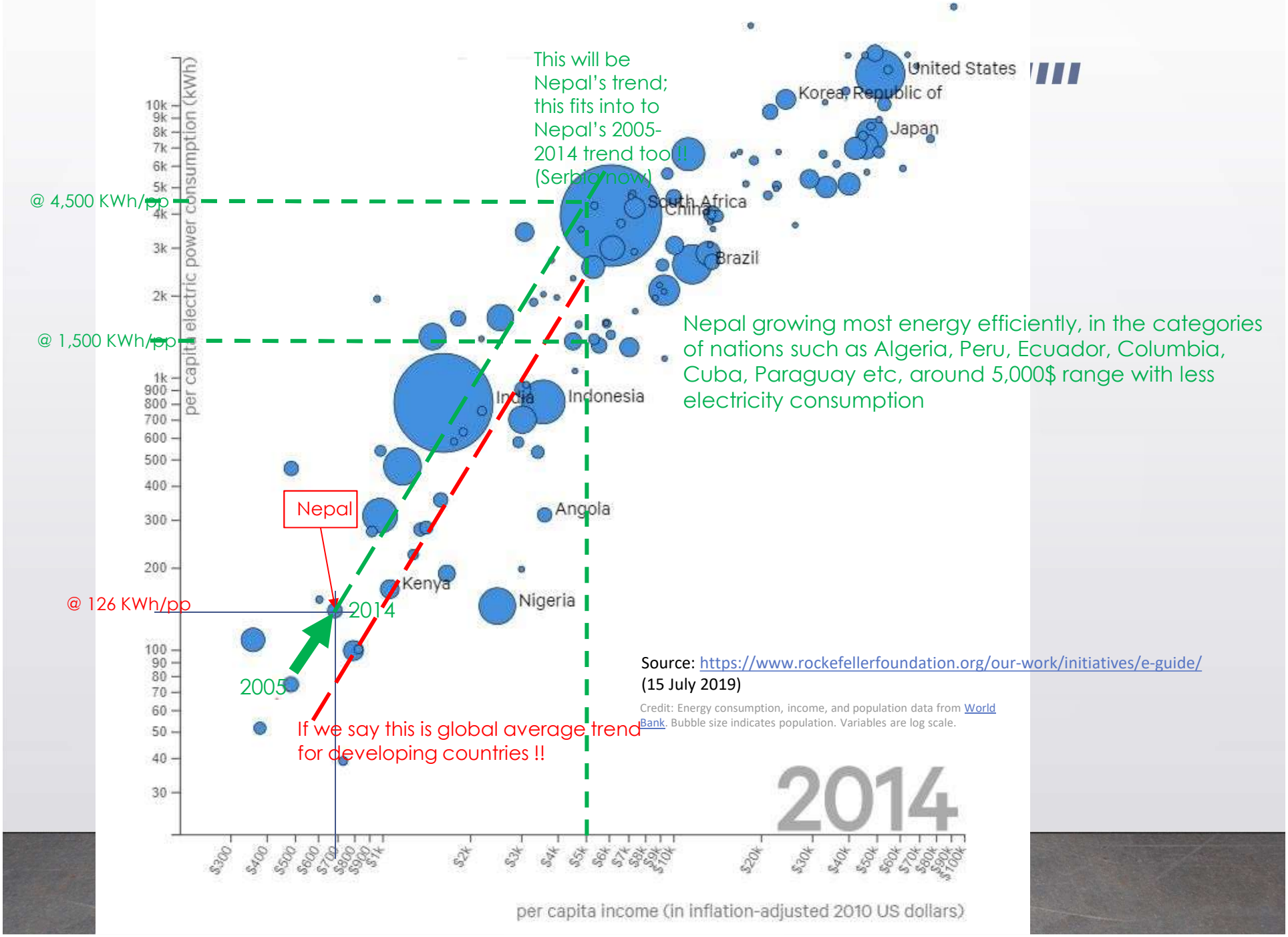
This will be Nepal's trend; this fits into to Nepal's 2005-2014 trend too !! (Serbia now)
@ 4,500 KWh/pp
@ 1,500 KWh/pp
@ 126 KWh/pp
Nepal growing most energy efficiently, in the categories of nations such as Algeria, Peru, Ecuador, Columbia, Cuba, Paraguay etc, around 5,000$ range with less electricity consumption
Nepal
2005
2014
If we say this is global average trend for developing countries !!
United States
Korea, Republic of
Japan
South Africa
China
Brazil
India
Indonesia
Angola
Kenya
Nigeria
per capita electric power consumption (kWh)
per capita income (in inflation-adjusted 2010 US dollars)
2014
Source: https://www.rockefellerfoundation.org/our-work/initiatives/e-guide/ (15 July 2019)
Credit: Energy consumption, income, and population data from World Bank. Bubble size indicates population. Variables are log scale.

What this means?

Scenario A -2035

- 9.5% real GDP growth
- 5,000 US$/pp real GDP (2010 price)
- 35.6 mn
- → electricity consumption range is 1,500 to 4,500 KWh/pp
- Total electricity requirement in 2035 → 54,500 GWh to 160,000 GWh → 10 to 30 times of 2018

Scenario B - 2035

- 7% real GDP growth
- 3,000 US$/pp real GDP
- 35.6 mn
- → electricity consumption range is 600 to 2000 KWh/pp
- Total electricity requirement in 2035 → 21,000 GWh to 71,000 GWh → 4 to 13 times of 2018

Benefits to Nepal are multiple

- Trade deficit reduction
- Prospect to sell at the high price during (a) peak period (b) no solar/wind period (unscheduled power) in India and Bangladesh
- More variable electricity in India and Bangladesh is more opportunity
- Surplus power during off peak
- Better give-and-take relation with neighbors

- Of course, selling products (as a result of surplus electricity) would be far better than raw resource export such as electricity

The ASEAN experience

ASEAN Energy Infrastructure Development

Guided by ASEAN Plan of Action for Energy Cooperation (APAEC)

- **APAEC 1999-2004**: Trans-ASEAN Gas Pipeline (TAGP) Master Plan by ASEAN Council on Petroleum (ASCOPE); ASEAN Interconnection Master Plan Study by Heads of ASEAN Power Utilities/Authorities (HAPUA)
- **APAEC 2004-2009:** Memorandum of Understanding for the ASEAN Power Grid (APG); Establishment of APG Consultative Council; the establishment of ASCOPE Gas Centre (AGC)
- **APAEC 2010-2015:** accelerating the implementation of action plans especially for APG, TAGP, clean coal technology and renewable energy amongst others.

ASEAN Plan of Action for Energy Cooperation 2010-2015

26 strategies and 91 actions in seven program areas

1) ASEAN Power Grid
2) Trans-ASEAN Gas Pipeline
3) Coal and Clean Coal Technology
4) Renewable Energy
5) Energy Efficiency and Conservation
6) Regional Energy Policy and Planning, and
7) Civilian Nuclear Energy

ASEAN PLAN OF ACTION FOR ENERGY COOPERATION (APAEC) 2016-2025

- initiate multilateral electricity trade in at least one sub-region by 2018

ASEAN Energy Cooperation Forums 43

- **AMEM**: ASEAN Ministers on Energy Meeting (once a year)
- **SOME**: Senior Officials Meeting on Energy (once a year)
- **ACE**: ASEAN Centre for Energy (accelerate the integration of energy strategies within ASEAN by providing information, technology and expertise)
- **AFOC**: ASEAN Forum on Coal
- **EE&C-SSN**: Energy Efficiency and Conservation Subsector Network
- **NRSE-SSN**: New and Renewable Sources of Energy Subsector Network
- **ASCOPE**: ASEAN Council on Petroleum
- **HAPUA**: Heads of ASEAN Power Utilities/Authorities
- **AERN**: ASEAN Energy Regulatory Network

GMS Inter-Governmental Agreement on Regional Power Trading (IGA)- 2002

- In 2002 GMS countries signed an inter-governmental agreement on regional power trade (IGA)- in 2003, regional power trade coordination committee (RPTCC) was formed
- A formal market is yet to emerge and process is slow but some connectivity is already achieved including Cambodia, China's Yunnan province, Lao PDR, Myanmar, Thailand and Vietnam
- Regional power infrastructure yet lacking; differences in technical standards and practices persist
- GMS initiative is well in line with the ASEAN Connectivity and AEC Blueprint

GMS power trade

- China- Vietnam: China started exporting electricity to Vietnam in 2004. Total exports through seven lines amounted 5.5 billion kWh in 2010 (Xinhua, 2011)
- China – Lao PDR: China exports to Lao PDR since 2009
- China – Myanmar: China started importing electricity from Myanmar in 2008. Total of 1.7 billion kWh was imported in 2010
- Laos PDR: Electricity exports from the Laos amounted 11.6% of the country's export revenues in 2007 (ICEM, 2010). Laos export to Thailand and China
  - Already a net exporter and even more important regional supplier in the future
- Cambodia – Thailand: Cambodian electricity imports amounted 385 million kWh from Thailand and 1,162 million kWh from Vietnam in 2010 (Poch & Tuy, 2012)- together it make 60% of total electricity consumption in Cambodia

Status of the Development of ASEAN Power Grid Network (6 out of 16 has made progress by 2017)

		Earliest COD
1)	P.Malaysia - Singapore (New)	2018
2)	Thailand - P.Malaysia	
	• Sadao - Bukit Keteri	Existing
	• Khlong Ngae - Gurun	Existing
	• Su Ngai Kolok - Rantau Panjang	2015
	• Khlong Ngae – Gurun (2nd Phase, 300MW)	2016
3)	Sarawak - P. Malaysia	2015-2021
★ 4)	P.Malaysia - Sumatra	2017
5)	Batam - Singapore	2015-2017
★ 6)	SarPhilippiawak - West Kalimantan	2015
7)	Philippines - Sabah	2020
8)	Sarawak - Sabah – Brunei	
	• Sarawak –Sabah	2020
	• Sabah – Brunei	Not Selected
	• Sarawak – Brunei	2012, 2016
9)	Thailand - Lao PDR	
	• Roi Et 2 - Nam Theun 2	Existing
	• Sakon Nakhon 2 – Thakhek – Then Hinboun (Exp.)	Existing
	• Mae Moh 3 - Nan - Hong Sa	2015
	• Udon Thani 3- Nabong (converted to 500KV)	2018
	• Ubon Ratchathani 3 – Pakse – Xe Pian Xe Namnoy	2018
	• Khon Kaen 4 – Loei 2 – Xayaburi	2019
	• Thailand – Lao PDR (New)	2015-2023
10)	Lao PDR - Vietnam	2011-2016
11)	Thailand - Myanmar	2016-2025
12)	Vietnam - Cambodia (New)	2017
13)	Lao PDR - Cambodia	2016
14)	Thailand - Cambodia (New)	2015-2020
15)	East Sabah - East Kalimantan	2020
16)	Singapore – Sumatra	2020

Master Plan on ASEAN Connectivity, The ASEAN Secretariat, January 2011
HAPUA Report to 28th Senior Officials Meeting on Energy, 2010
http://portal.erc.or.th/aern/images/Panel%201-1%20Briefing%20on%20ASEAN%20Power%20Grid.pdf

Way forward for BBIN Region?

1. Build regional trust and political will

- Well-structured but regular independent dialogues across multiple stakeholder – build networks
  - Power ministries and regulators meet regularly
  - University/research institutions network do joint research
  - Power companies meet regularly
  - Investor forums and dialogues on barrier and opportunities
  - NGOs, social actor network, Prominent personalities network
  - Media network on region electricity market
- India has to play center stage but with due care that others not feel intimidated – CERC Guideline change in Dec 2018 is a good sign but yet nor enough
- Huge role of other countries and agencies to help here

2. Build better information base on scale of benefits and other technical, economic and social issues

→ Build one trusted independent center to provide reliable information/support/ coordinate for the region

- **Example :** ASEAN Centre for Energy (provide information, technology and expertise)

3. Build new/enhanced sub-regional mechanisms

- SAARC → Dead
- BIMSTEC ? 7 member signed MOU to explore electricity trade in 2018
- BBIN ? – This is doable (see GMS analogy of ASEAN)
- **Create concrete electricity market vision and plans**

- See → ASEAN Plan of Action for Energy Cooperation; ASEAN Power Grid (APG) Plan

ASEAN Power Grid (APG)

- Mandated in 1997 by the ASEAN Heads of States/Governments under the ASEAN Vision 2020 towards ensuring regional energy security while promoting the efficient utilization and sharing of resources
- APG encourages interconnections of identified projects, first on cross-border bilateral terms, then gradually expand to sub-regional basis and, finally to a totally integrated Southeast Asian power grid system
- ASEAN Interconnection Master Plan Study 2 (AIMS-II) identified 16 cross-border projects for APG to be implemented 2025 for APG
  - 5 cross-border projects are partially existing (Project 1, 2, 9, 12, and 14)
  - 4 cross-border projects are under construction (Project 6, 8, 10, and 13)
  - 7 cross-border projects are future projects (Project 3, 4, 5, 7, 11, 15, and 16)

4. Plan and develop cross-border transmission infrastructure and address technical issues

- Involve financial institutions such as ADB, World Bank, AIIB – build **Regional Investment Framework**
- **Joint working groups of utilities** across region
- Short-term plans (no regret plans)
- Long-term plans
- Solutions to technical issues

5. Increase installed capacity of hydro incl solar and wind and develop market mechanisms

- Sign more MOU between countries for power trade → **Upscale bilateral and more on tri-lateral** power development and purchase agreements
- Joint funding of two more countries
- Support and invite FDI – let private sector drive
- Develop joint **Regional Investment Framework**

6. Build/demonstrate few GOOD showcase models of activities/project of regional cooperation to build greater confidence

Thank you

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