# Workshop 3:

# Conducting Climate Change Policy – Best Practices and Regional Cooperation

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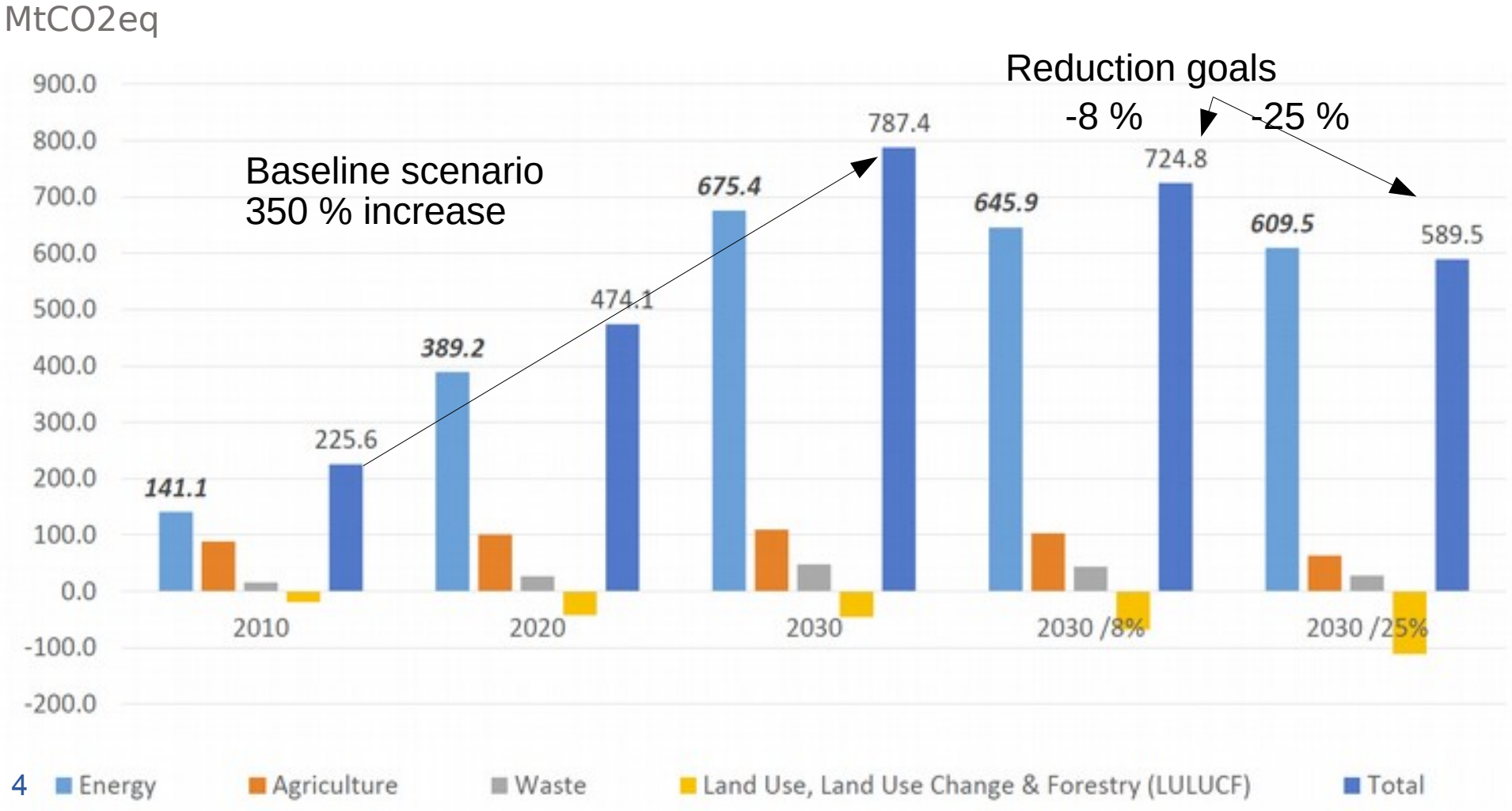
# Insights for Vietnam's Energy Transition in the Power Sector and international cooperation

# 0. The old narrative

- Building more coal power plants will allow to satisfy the rapidly increasing power demand.

- Grid expands to transmit power from a small number of big power plants to everybody in the country

# VN $CO_2$ emissions 2010 — 2030
# 25 % reduction on 350 % increase



# And also...

- Delays in building plants, power shortage risk back
- Exposure to international coal price risk since 2016
- EVN GENCO 3 IPO failed
- Air quality degradation

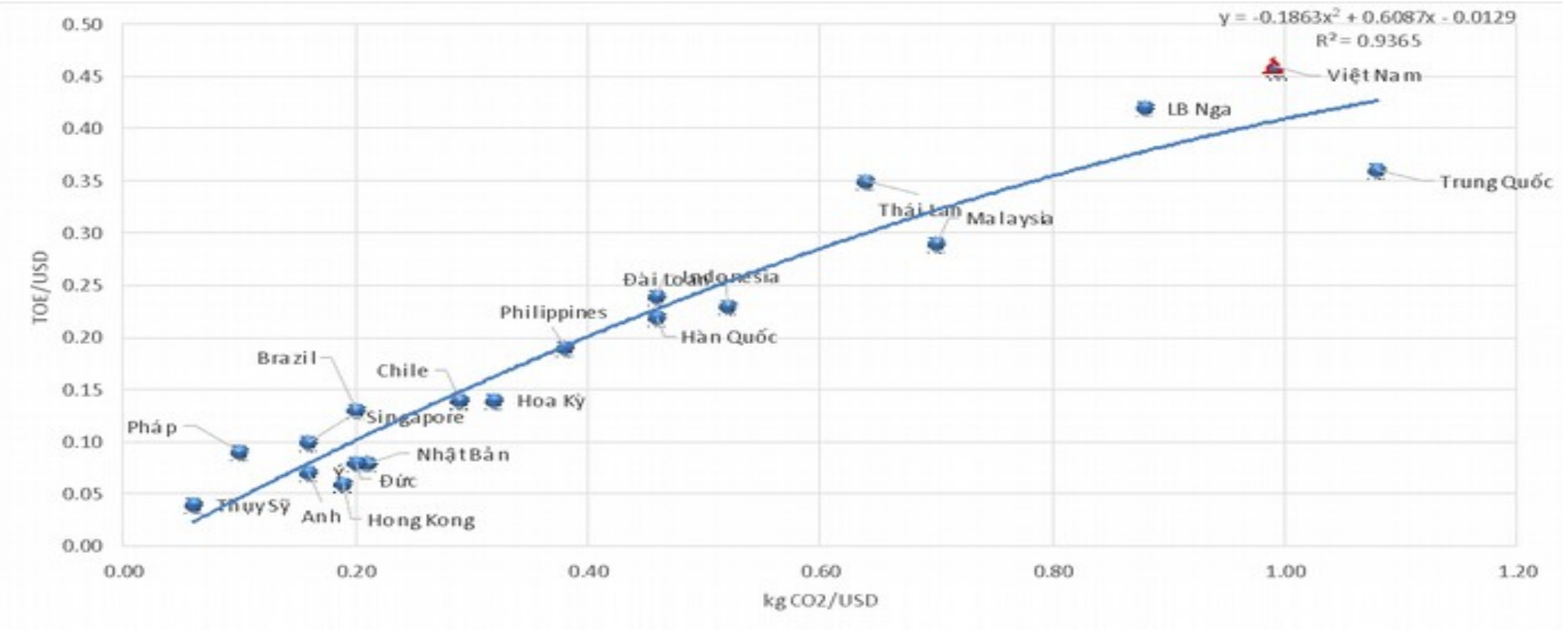
# 7 insights for a new narrative

1) The Vietnam power system can change course rapidly.
2) There is lots of potential for energy efficiency.
3) Renewables are competitive with fossil fuels.
4) Solar and wind power generation is developing exponentially fast.
5) Hydro, flexible thermal power and batteries can ensure system reliability at acceptable costs.
6) Power market reform can foster investments in renewable energy sources
7) Technological forces towards a smart, decentralized energy system are irresistible.

# 1. Vietnam energy system can change course rapidly

# 2. Vietnam economy as lots of potential to increase efficiency in energy supply and demand

***Comparison of energy intensity and the intensity of CO2 emissions per GDP***
*(Fig 6 in Energy Statistics Vietnam 2015)*



# Energy efficiency cooperation

- Benchmarking energy performance in industry sectors
- Sharing standards and regulations
- Training programs in Energy Auditing and Management

**3. Solar and wind electricity generation costs are competitive with those of fossil fuels.**

**4. Solar and Wind power generation is developing exponentially fast**

# Renewable energy projects pipeline

| **Status July 2018:** | Operation | Construction | Design and FS | Pre-investment |
|---|---|---|---|---|
| Solar energy | 1 project<br>7 MW | 10 projects<br>1002 MW | 28 projects<br>1 432 MW | 79 projects<br>12 622 MW |
| Wind energy | 6 projects<br>189 MW | 16 projects<br>739 MW | 21 projects<br>1 804 MW | 21 projects<br>3 012 MW |
| Biomass energy | 13 projects<br>270 MW | 1 project<br>60 MW | 17 projects<br>481 MW | 10 projects<br>87 MW |

Source (Le Xuan Dong, 2018). Statistics do not include a significant number of Solar projects approved or registered in the summer of 2018.

# Renewable energy cooperation

- Projects-scale: foreign investor bring know how, local group brings land and building.
- Technical assistance by development partners to the government
- Financial assistance to projects – but debt constraint

# Remaining problem area : finance

- International banks don’t loan to PV farms in Vietnam
  - EVN may not take the electricity and pay
  - Compensation in case of early termination
  - Arbitrage in case of conflict

- Clean Development Mechanism & Article 6 dead in the water.

# 5. Hydro, flexible thermal power and batteries can ensure system reliability at acceptable costs.

# Cooperation & integration of renewables

- Many European countries rely on electric interconnections to stabilize the grid
- Not applicable in Southeast Asia : Vietnam grid like an island.
- But that’s not the problem at the moment, and there will be other ways

## 6. Power market reform can facilitate clean energy growth

## 7. Technological forces towards a smart, decentralized energy system are irresistible.

# Power market reform & cooperation : a potential to solve the finance issue

- Multinationals want to buy green electricity
- Green finance looking into infrastructure

# Conclusion : recent narrative change

~~Building more coal power plants will allow to satisfy the rapidly increasing power demand. Grid expands to transmit power from a small number of big power plants to everybody in the country.~~

Coal remains the backbone of the power system. Focus recently shifted to renewable energy because they are domestic, affordable and quick to implement. They will be distributed across the country.

# Cooperation had a role

- Solar and wind farms are affordable now – developed countries took the lead.
- Gas is more interesting than coal – US push
- International climate policy – carrots and sticks.