

# Research Brief on Energy

Office of Senator Win Gatchalian

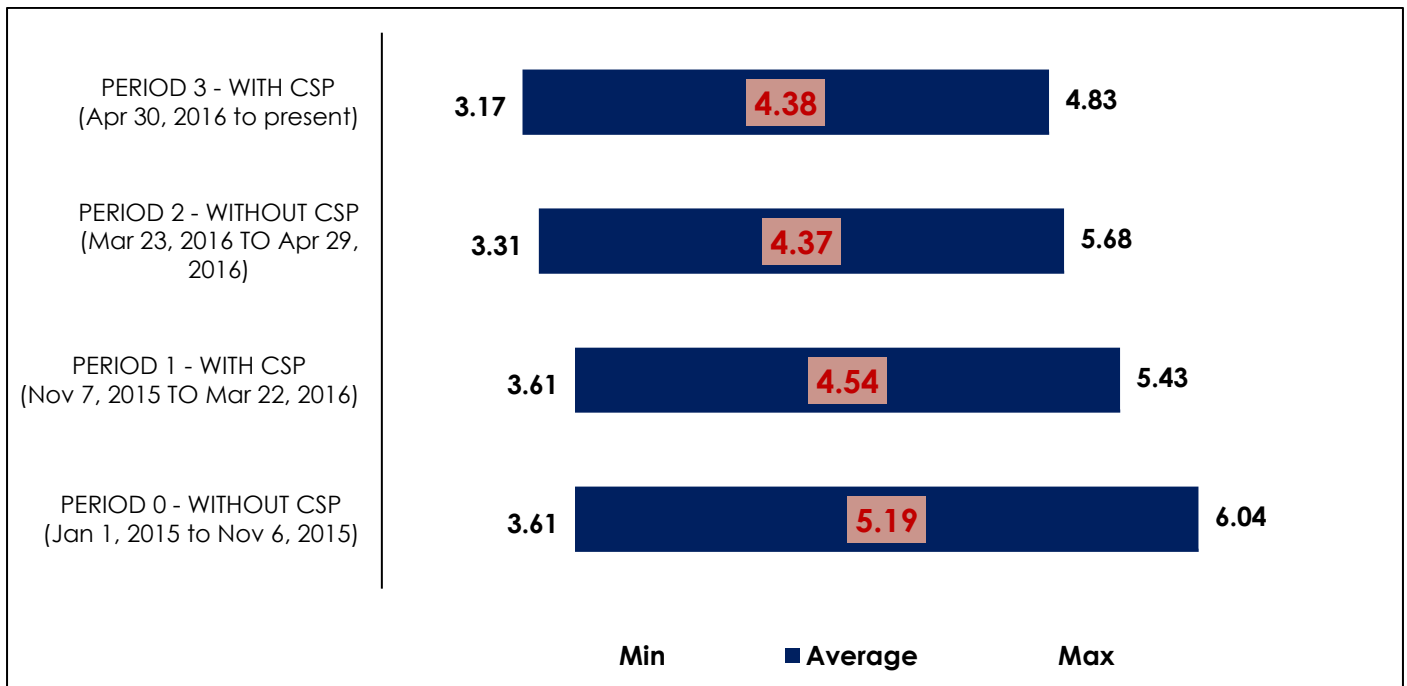
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Version 1

Atty. Ivan Galura and Aaron De Lara

## Hydro and Geothermal Potential in the Philippines

### Philippine Energy Mix



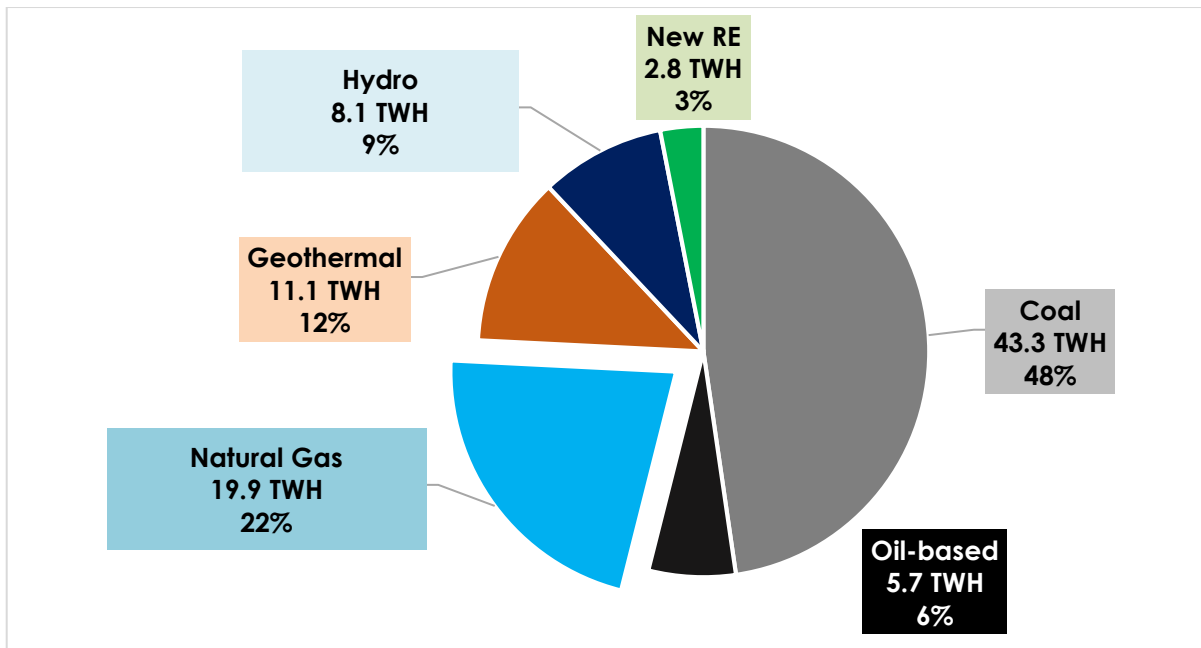
Source: ERC

**Figure 1: Historical Electricity Generation Mix in the Philippines (in Terawatt Hours and %)**

Source: Department of Energy

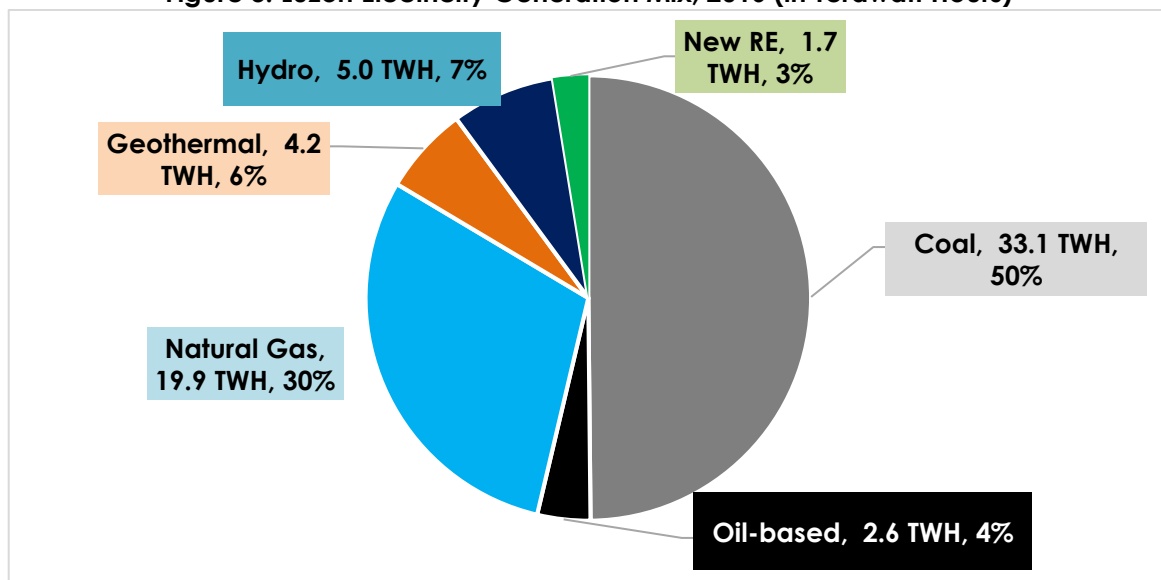
- Figure 1 suggests that the present energy mix was largely defined by two structural shifts within the Philippine energy generation industry:
  - The sustained expansion of coal power beginning in the late 90s
  - The introduction of natural gas power at the turn of the century
- The numbers suggest that natural gas energy (alongside coal energy) "crowded out" oil energy. Figure 1 clearly illustrates the manner in which the share of oil energy declined as natural gas energy increased.
- The numbers also indicate that natural gas played a key role in expanding the supply of energy despite the lack of growth in geothermal energy and hydro energy.

**Figure 2: Philippines Electricity Generation Mix, 2016 (in Terawatt Hours)**





Source: Department of Energy

**Figure 3: Luzon Electricity Generation Mix, 2016 (in Terawatt Hours)**



Source: Department of Energy

- Figures 2 and 3 provide snapshots of the Philippine energy generation mix. The numbers indicate that natural gas is, at present an indispensable component of the Philippine energy generation mix.
- Natural gas energy is the second largest component of the Philippine energy mix and is responsible for close to a fourth of the generation of the entire Philippine archipelago.
- Figure 3 further underlines the importance of natural gas to the Luzon grid. Natural gas energy constitutes almost a third of the total energy generation of the Luzon grid.
- Another important consideration is that ALL natural gas electricity goes to Luzon. Given the centrality of Luzon to the Philippine economy, the phasing-out or replacement of natural gas in the energy mix is a key policy concern.

	<b>Geothermal</b>	<b>Hydropower</b>
		
<b>Target Additional Capacity 2016-2030</b>	1,371 MW	1,554 MW
<b>Investment Cost</b>	\$ 5.3 Billion	\$ 3.9 Billion

Source: Department of Energy