

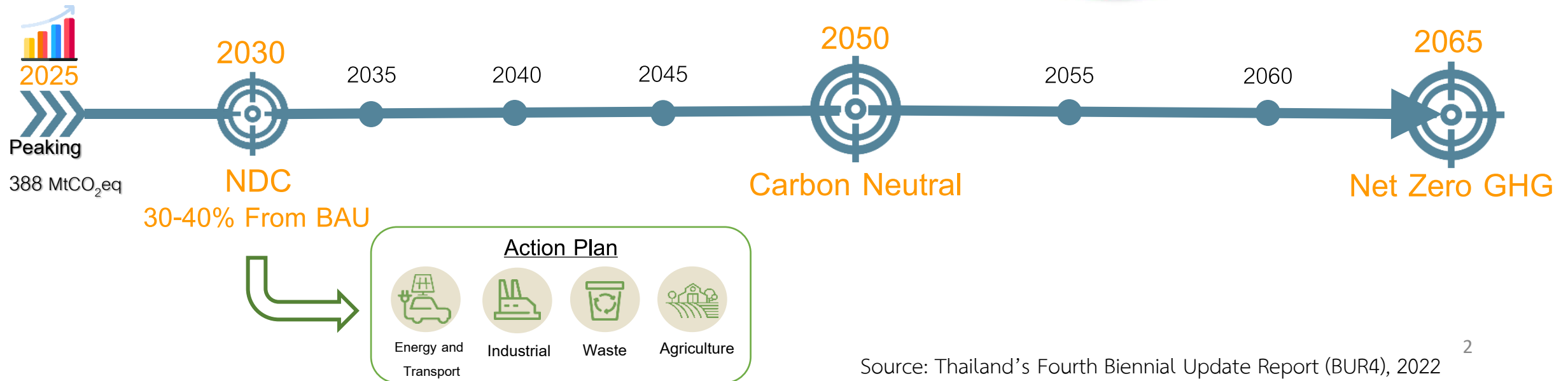
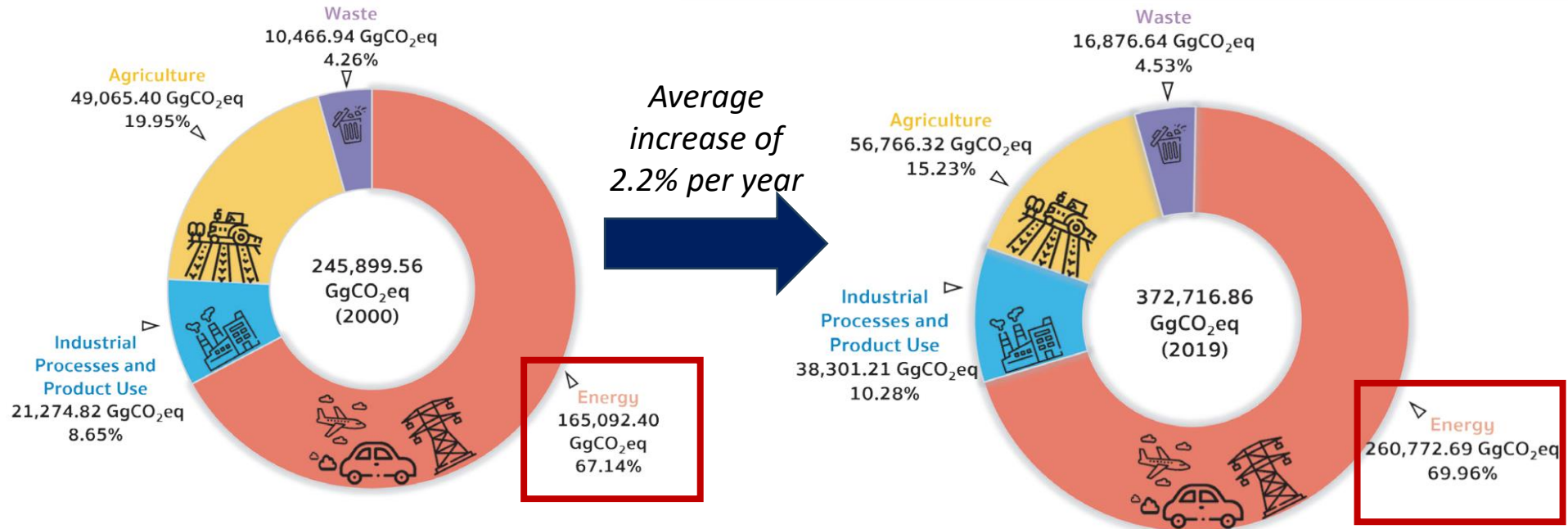


34th Energy Conservation Workshop under ASEAN-Japan Energy Efficiency Partnership [ECAP34]

Department of Alternative Energy
Development and Efficiency

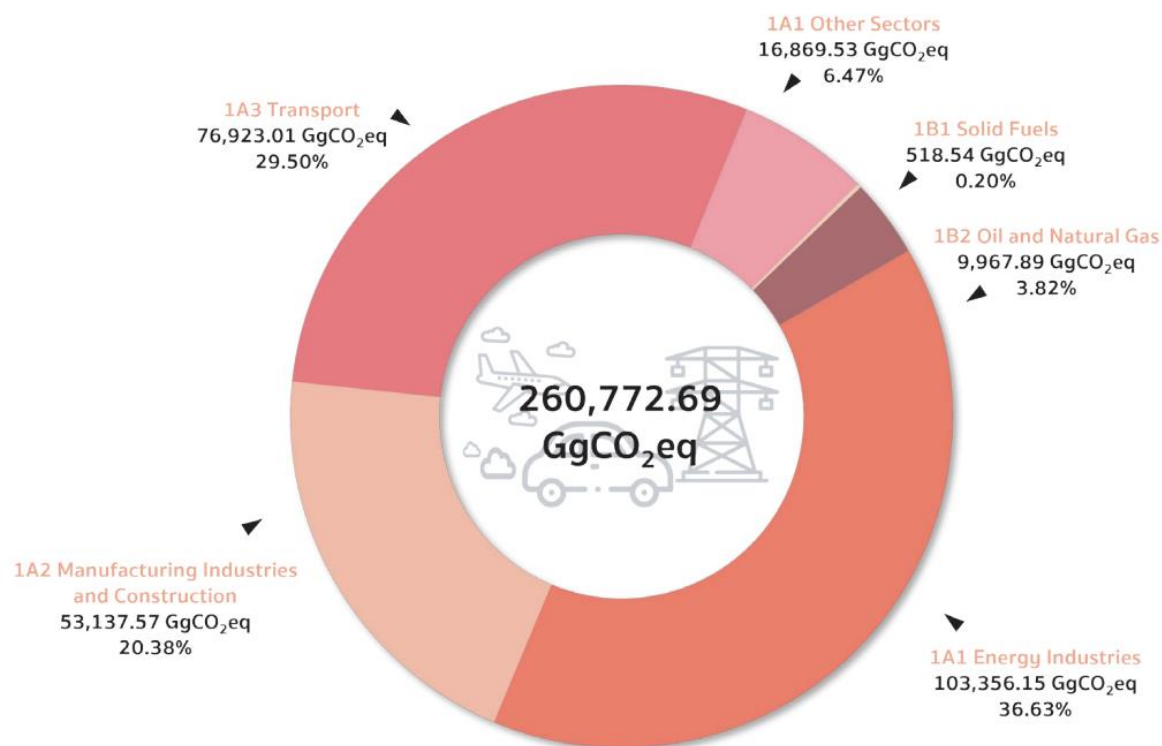
12th – 15th November 2024

Roadmap to Net Zero GHG Emission



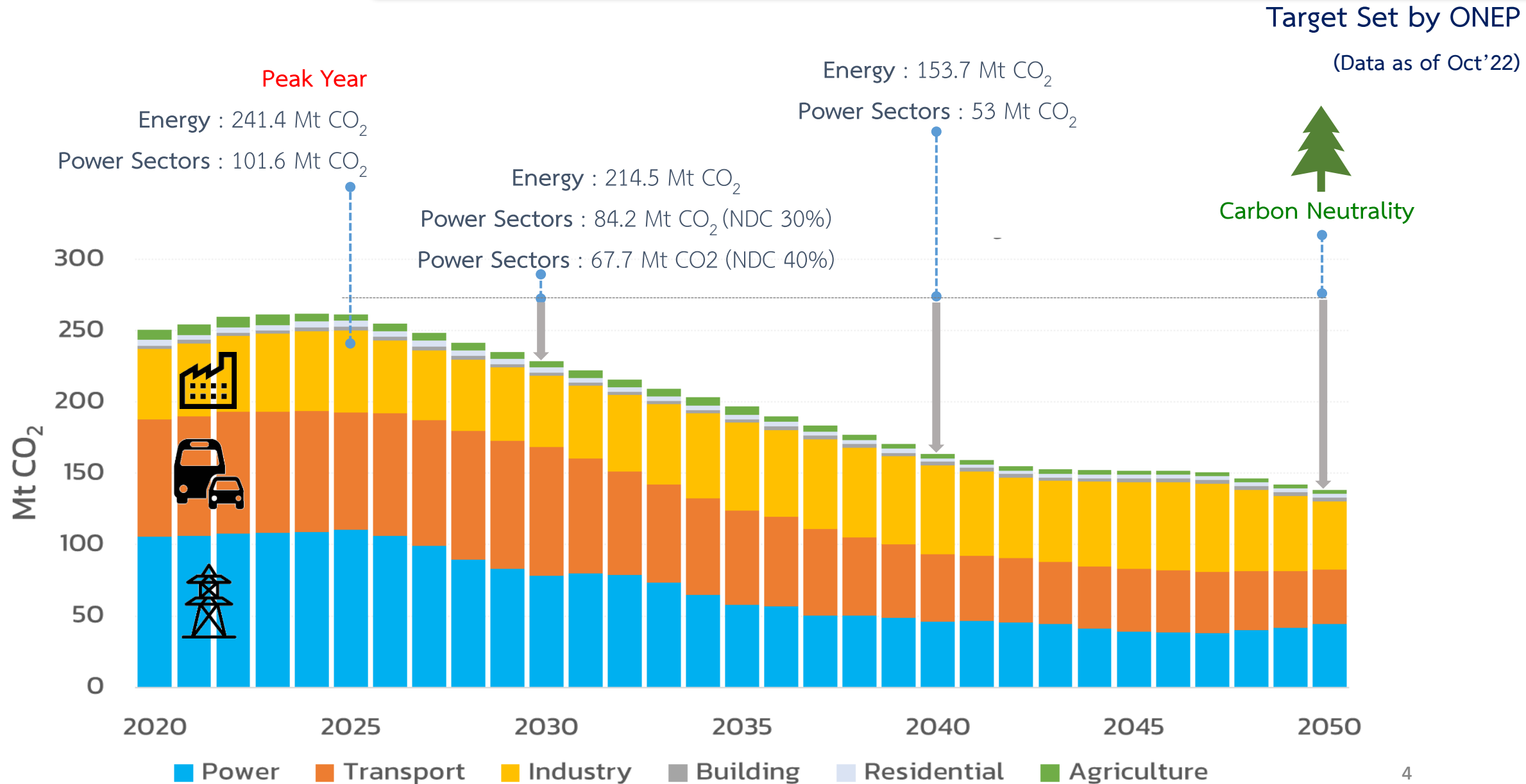
Emission in Energy Sector

Energy Sector Emission; 2019



Greenhouse Gas Source and Sink categories	Amount (GgCO ₂ eq)
1 Energy Sector	260,772.69
1A (Fuel combustion activities)	<u>250,286.26</u>
1A1 Energy industries	103,356.15
1A2 Manufacturing industries and construction)	53,137.57
1A3 Transport	76,923.01
1A4 Other	16,869.53
1B Fugitive emissions from fuels	<u>10,486.43</u>
1B1 Solid fuels	518.54
1B2 Oil and natural gas	9,967.89

Energy Sector Reduction Vision - 2050



National Energy Plan - NEP

Policy Direction to National Energy Plan



Should not be referenced: currently under consideration and subject to changes

Key Considerations

- GDP and Population Projection Update (GDP 2.6) – March 18th, 2022
- Consider Carbon Neutrality target in energy sector (95.5 MtCO₂eq)
- Electric Vehicle projection from EPPO
- Sector-specific measures and supply-side measures



Target energy intensity (EI) reduction

30% (approx. 49 Mtoe) by 2037 (base year 2010)		36% by 2037 and 40% by 2050 (base year 2010)	
Electricity 31%	Heat 69%	Electricity 25%	Heat 75%
15,379 ktoe	33,685 ktoe	8,761 ktoe	26,736 ktoe

Revised Energy Efficiency Plan 2024 (In Progress)

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Energy efficiency measures target by energy types: 2024 - 2037

Unit: ktoe

	Compulsory	Voluntary	Total	%
Electricity	2,679	6,083	8,761	25
Thermal	5,672	21,063	26,736	75
Total	8,351	27,146	35,497	100

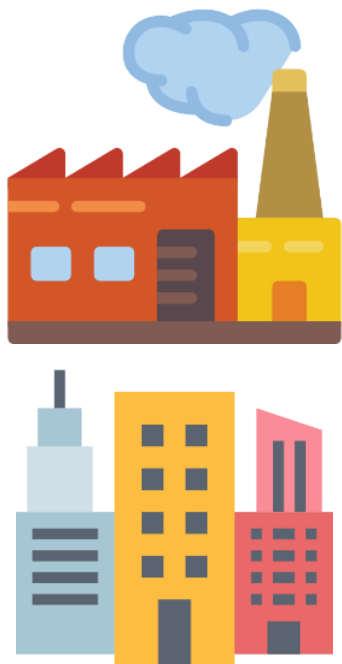
Energy efficiency measures target by economic sectors: 2024 - 2037

Unit: ktoe

Sector	Compulsory		Voluntary		Total	%
	Elec.	Thermal	Elec.	Thermal		
1. Industrial	1,136	3,995	2,897	4,404	12,432	35
2. Commercial	1,473	28	1,491	550	3,542	10
3. Residential	20	-	1,546	208	1,774	5
4. Agricultural	50	-	148	512	710	2
5. Transportation		1,650	-	15,389	17,039	48
Total	2,679	5,672	6,083	21,063	35,497	100

Policies needed – Industrial and Commercial Sector

Should not be referenced: currently under consideration and subject to changes

	Compulsory	Voluntary	Complementary
 15,974 ktoe	- Energy management standards in designated factories and buildings (5,764 ktoe) - Enforcement of factory and building energy codes (867 ktoe)	- Energy efficiency standards and labelling for equipment (3,568 ktoe) - Financial Incentives - Direct subsidy (Subsidy, 80:20) - Loans (Soft loan, ESCO Fund) - Tax incentive - Credit Guarantee Mechanism (4,856 ktoe) - Promoting innovations (IOT, Smart Factory, Smart Building, Big Data) (317 ktoe) - Promoting energy efficiency in equipment utilizing renewable energy (Biomass boiler, Biomass furnace, Generator, Solar Heat) (322 ktoe) - Energy efficiency for the supply side (280 ktoe)	- Human Resource Development - Public awareness - Research and Development of technologies and innovations

Policies needed – Transportation Sector

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	Compulsory	Voluntary	Complementary
	Energy efficiency measures for land transport - Excise tax (Eco-Sticker) (1,499 ktoe) - Energy efficiency standards and labelling for tires (151 Ktoe)	Energy efficiency measures for land transport - Subsidy (up to 30%) (20 Ktoe) - Financial supports for energy service companies (28 Ktoe) Energy efficiency measures for water transport - Freight and public transport (Mode shifting, etc.) (33 Ktoe) Energy efficiency measures for rail transport - Double-railed transport, Electric mass transport, sub-urban transport, and high-speed train (6,246 ktoe) Energy efficiency measures for air transport - Management and equipment change for airports (10 ktoe) Promotion of Electric Vehicle (EV) (9,052 ktoe)	- Human Resource Development on ECO-Drive - Public awareness - Research and Development of technologies and innovations



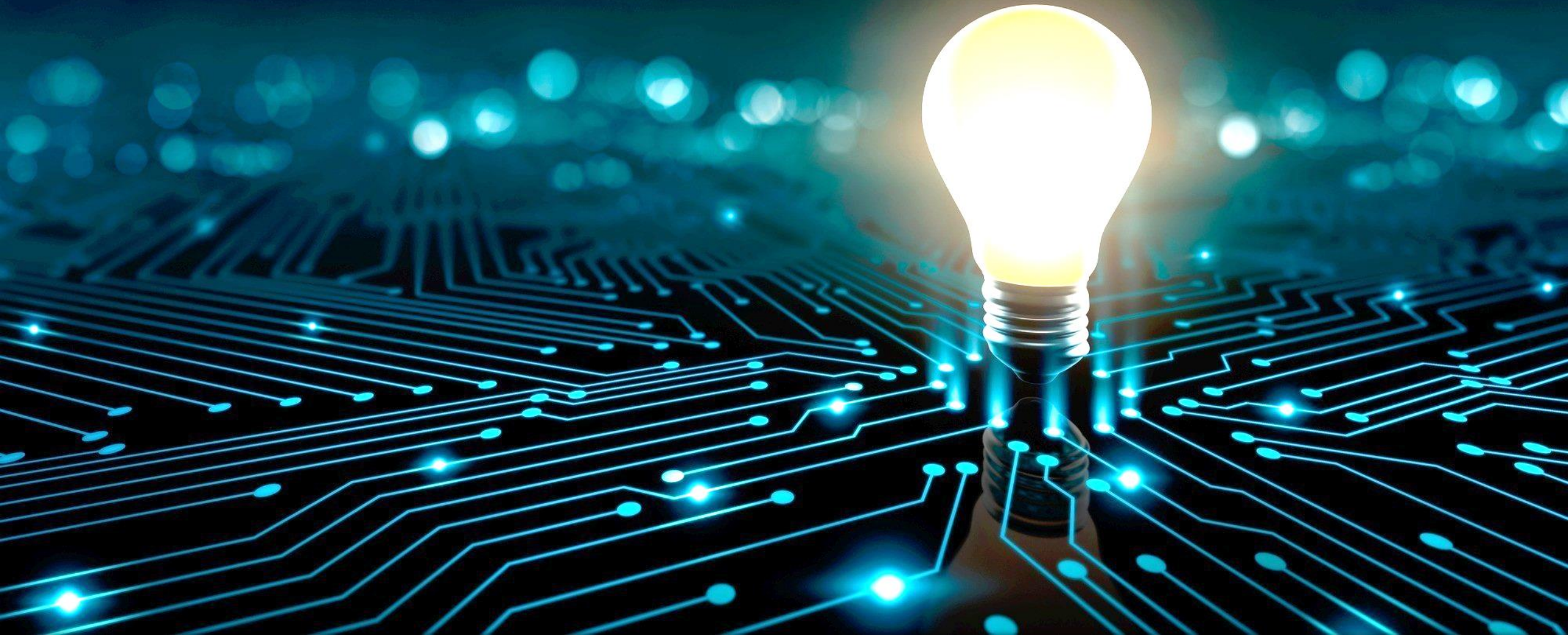
17,039 ktoe

Policies needed – Residential and Agricultural Sector

Should not be referenced: currently under consideration and subject to changes

Residential	Compulsory	Voluntary	Complementary
 1,774 ktoe	Residential Energy Code: minimum energy performance standards for new residence to improve energy efficiency (20 ktoe)	• Energy-efficient residence design Promote the design and construction of energy-efficient residence in accordance with the high energy performance standards (10 ktoe) • Labelling programs Increase the amount of energy labelling for equipment with high energy consumption e.g. air-conditioner or stove (1,744 ktoe)	• Human Resource Development • Public awareness • Research and Development of technologies and innovations
Agricultural			
 710 ktoe	Farming Energy Code: enforcing minimum energy performance standards farmsteads and ranches (50 ktoe)	• Smart farm Promote utilization of technologies to increase the energy efficiency in farms (660 ktoe)	

Thank You



For further information, please contact email: apiwadee_d@dede.go.th