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# AIM models contributions to The National Strategy on Climate Change for 2050 of Vietnam

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# AIM models contribution

- The AIM team has contributed to the preparation the long-term strategy. Results of the Asia-Pacific Integrated Model (AIM) was used for reference and consulted with line ministries, as the agreement at the 6<sup>th</sup> Vietnam – Japan Environmental Policy Dialogue between the Ministry of Natural Resources (MONRE) of Vietnam and the Ministry of the Environment of Japan (MoEJ) organized on August 24<sup>th</sup> and 25<sup>th</sup> 2020 virtually.
- The MONRE and MoEJ agreed that the development of the long-term strategy of Vietnam based on AIM (Asia-Pacific Integrated Model).
- The AIM model has provided an overview of long-term GHG peak of Vietnam, and suggested the potential countermeasures, as well as paths to achieve the mitigation targets.
- Three models have been used in this study; ExSS (Extended Snapshot) model to assess the emissions in 2050, AIM/Enduse to assess the technology options to achieve the future GHG mitigation, and AIM/CGE to assess the economic impacts to reduce the GHG emissions.

# Suggestions from models results

- To achieve carbon neutrality without unreasonable transition, it is necessary to set the peak year before 2035.
- To consider high proportion of RE in electricity generation.
- Power generation in Coal Power Plant will be peak in 2025 and decline to zero by 2050
- New Gas Power Plants should be equipped with CCS or be prepared to install CCS. CCS should be started after 2030 at latest.
- More than 50% of new Biomass Power Plants should be equipped with CCS or be prepared to install CCS by 2050.
- Hydrogen should be Equivalent to 25% of total final energy consumption in 2020 is required by 2050.
- CCS in the industry sector: It would be required in cement sector and iron and steel sector by 2050.
- Annual CCS quantity: In 2050 necessary scale of CCS will reach more amount than the total CO<sub>2</sub> emission from fuel combustion and industrial process in 2014. It is essential to find the suitable place for storage and operate the system within coming 30 years.
- All passenger cars should be EV after 2030, freight cars should be BEV or FCV after 2040.

# National Strategy on CC

- **Issued by Decision No. 896/QD-TTg dated 26<sup>th</sup> July 2022 by PM**
- **By 2030:** total national GHG emissions are reduced by 43.5% compared to BAU.
- In which:
  - **The energy sector** decreased by 32.6%, the emissions did not exceed 457 million tons of CO<sub>2</sub> equivalent (CO<sub>2</sub>eq);
  - **The agricultural sector** decreased by 43.0%, the emissions did not exceed 64 million tons of CO<sub>2</sub>eq;
  - **The forestry sector, land use** will reduce emissions by 70% and increase carbon sequestration by 20%, with total emissions and removals reaching at least -95 million tons of CO<sub>2</sub>eq;
  - **Waste sector** decreased by 60.7%, emissions did not exceed 18 million tons of CO<sub>2</sub>eq;
  - **The industrial processes sector** decreased by 38.3%, the emissions did not exceed 86 million tons of CO<sub>2</sub>eq. Establishments with annual greenhouse gas emissions of 2,000 tons CO<sub>2</sub>eq or more must reduce greenhouse gas emissions.

# National Strategy on CC

- **By 2050:** total national GHG emissions reach the net emission level of “0”; emissions **peak in 2035**, then decline rapidly.
- In which:
  - **The energy sector** decreased by 91.6%, the emissions did not exceed 101 million tons of CO<sub>2</sub>eq;
  - **The agricultural sector** decreased by 63.1%, the emissions did not exceed 56 million tons of CO<sub>2</sub>eq;
  - **The forestry sector, land use** will reduce emissions by 90%, increase carbon sequestration by 30%, total emission and absorption will reach at least -185 million tons of CO<sub>2</sub>eq;
  - **The waste sector** decreased by 90.7%, the emissions did not exceed 8 million tons of CO<sub>2</sub>eq;
  - **The industrial processes sector** decreased by 84.8%, the emissions did not exceed 20 million tons of CO<sub>2</sub>eq. Establishments with annual greenhouse gas emissions of 200 tons of CO<sub>2</sub>eq or more must reduce greenhouse gas emissions.

# Remarks

- The earlier hydrogen and CCS are introduced, the earlier the GHG emission peaks, and that leads to avoid the rapid emission reduction in a short term after the peak. In order to avoid stranded assets, CCS must be ready for being equipped with industrial and power plants well in advance.
- To achieve the net zero emission, it is estimated the amount of investment around 308 billion USD. The international support will accelerate the peak out, to help the country achieve both GDP growth and GHG emission reduction.
- It still needs a good and effective coordination amongst line ministries, with the direction from the top leader in implementing existing climate change policies. Regular review and update of ministries action plan are important to achieve the target of the Net Zero Emission by 2050 for Vietnam.

Thank you very much for  
your attention!