



POLICY SOLUTIONS FOR CLIMATE CHANGE

SONIA AGGARWAL
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ENERGY INNOVATION
POLICY & TECHNOLOGY LLC



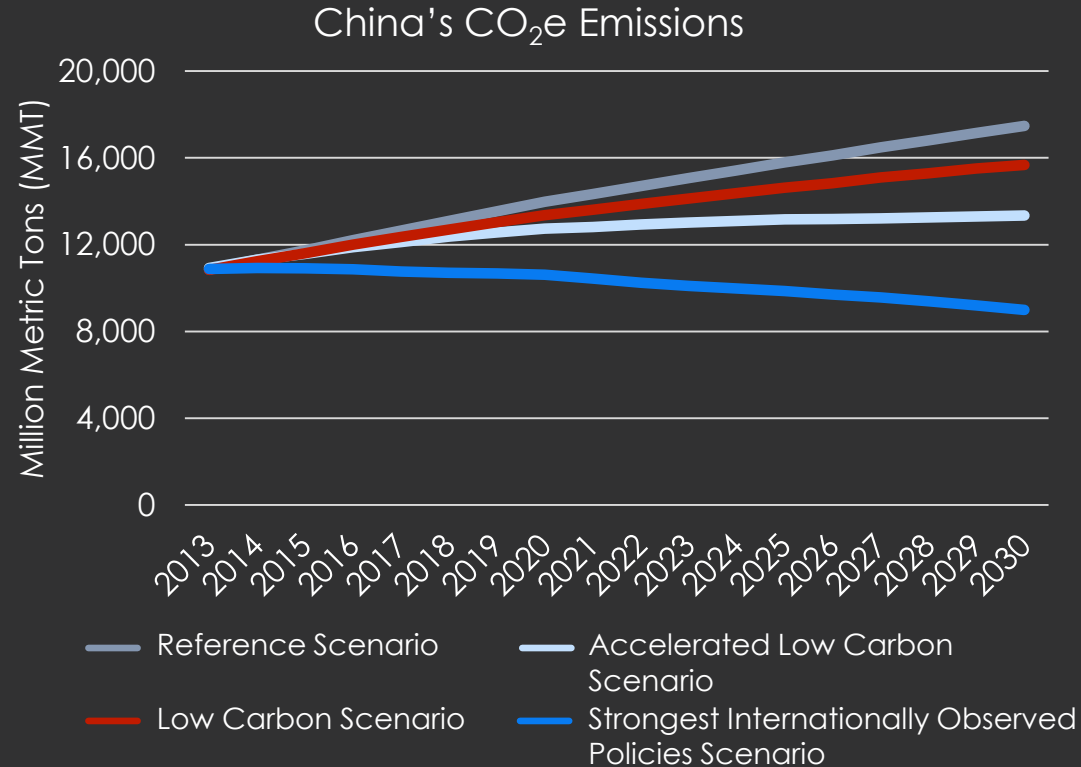
PRESENTATION OUTLINE

1. Introduction to Energy Policy Simulator
2. Sector By Sector Policy Analysis
3. Insights from Policy Analysis and Accelerated Low Carbon Scenario



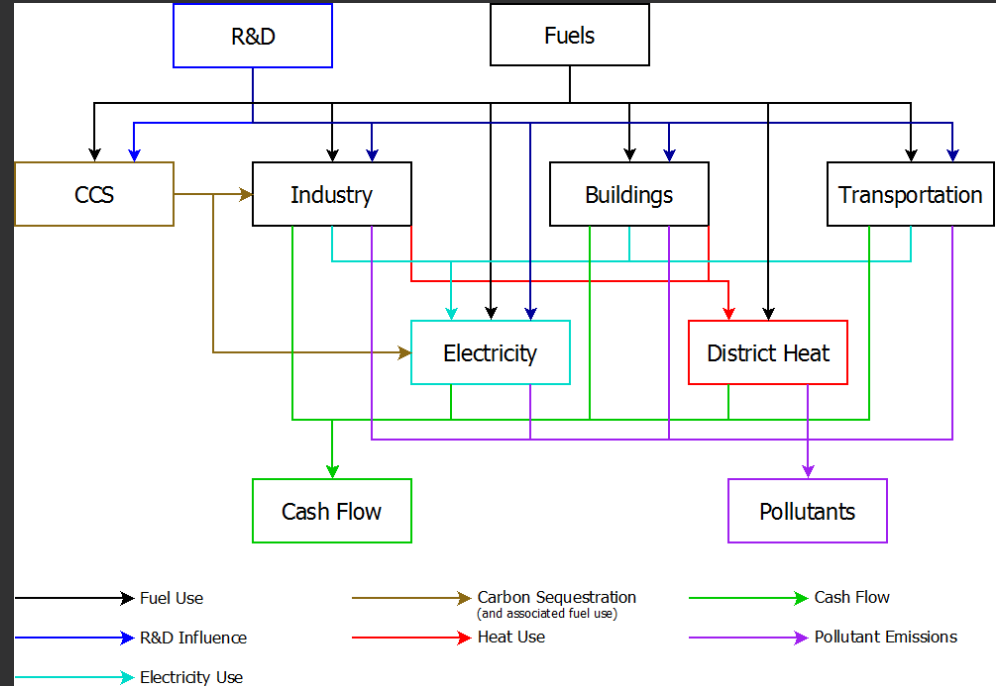
WHAT POLICIES CAN DRIVE DOWN CARBON EMISSIONS IN CHINA?

- To help understand how China can attack its pollution problem, we developed the Energy Policy Simulator
- This model reports changes in ***emissions*** and ***cash flows*** from **policies**



THE POLICY SOLUTIONS MODEL

- More than 10,000 lines of code
- 1,300 variables
- 106 input data tables
- 2 years in the making



AN NCSC, ERI, AND ENERGY INNOVATION COLLABORATION

- NCSC, ERI, and EI worked together to build this model
- NCSC and ERI have approved the model structure and data
- The final report will highlight two scenarios from NCSC and ERI plus one scenario from EI



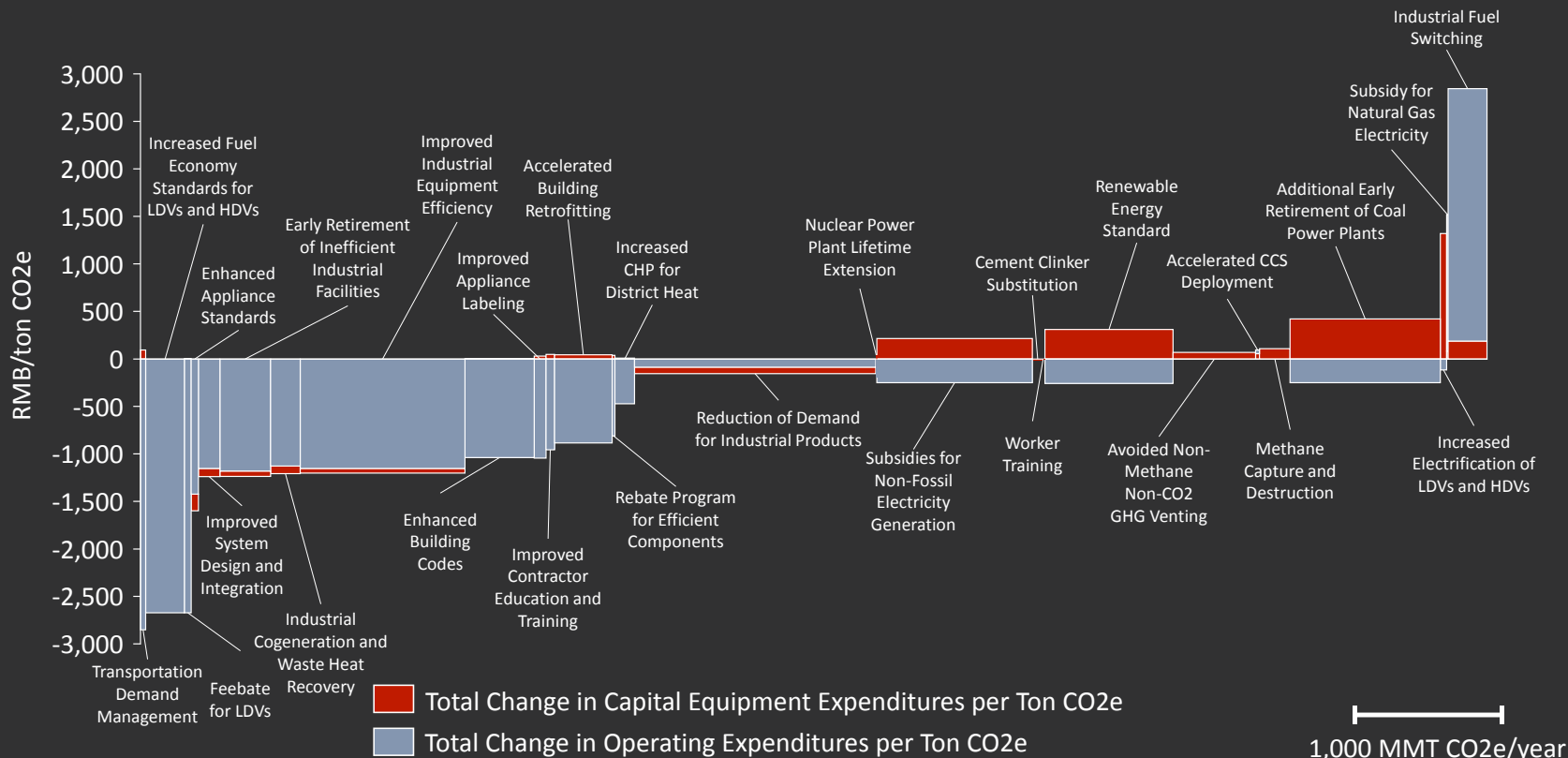
EXTERNAL REVIEWERS, ADVISERS, AND CONTRIBUTORS

Participation and review by top academics and researchers



SECTOR BY SECTOR RESULTS

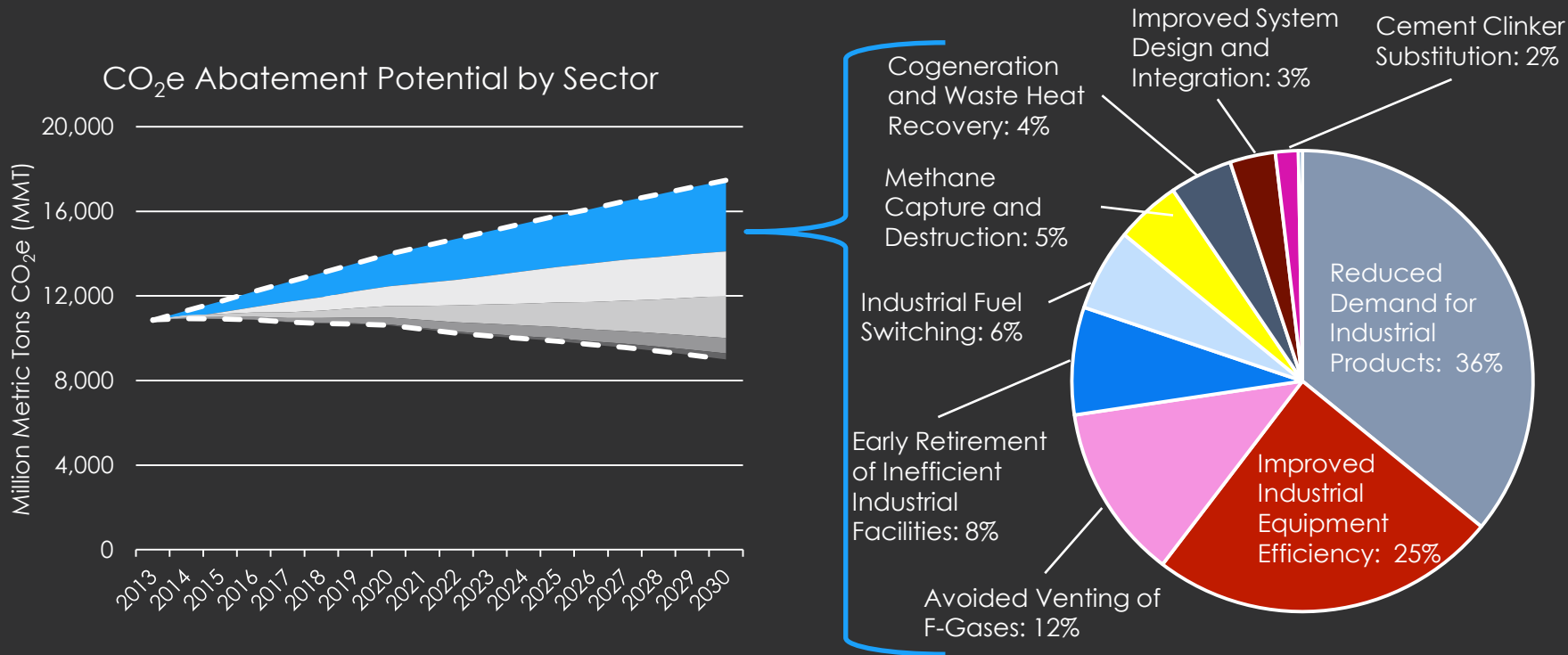
ABATEMENT POTENTIAL AND COST-EFFECTIVENESS



Maximum abatement potential is an approximation based on our scaling methodology

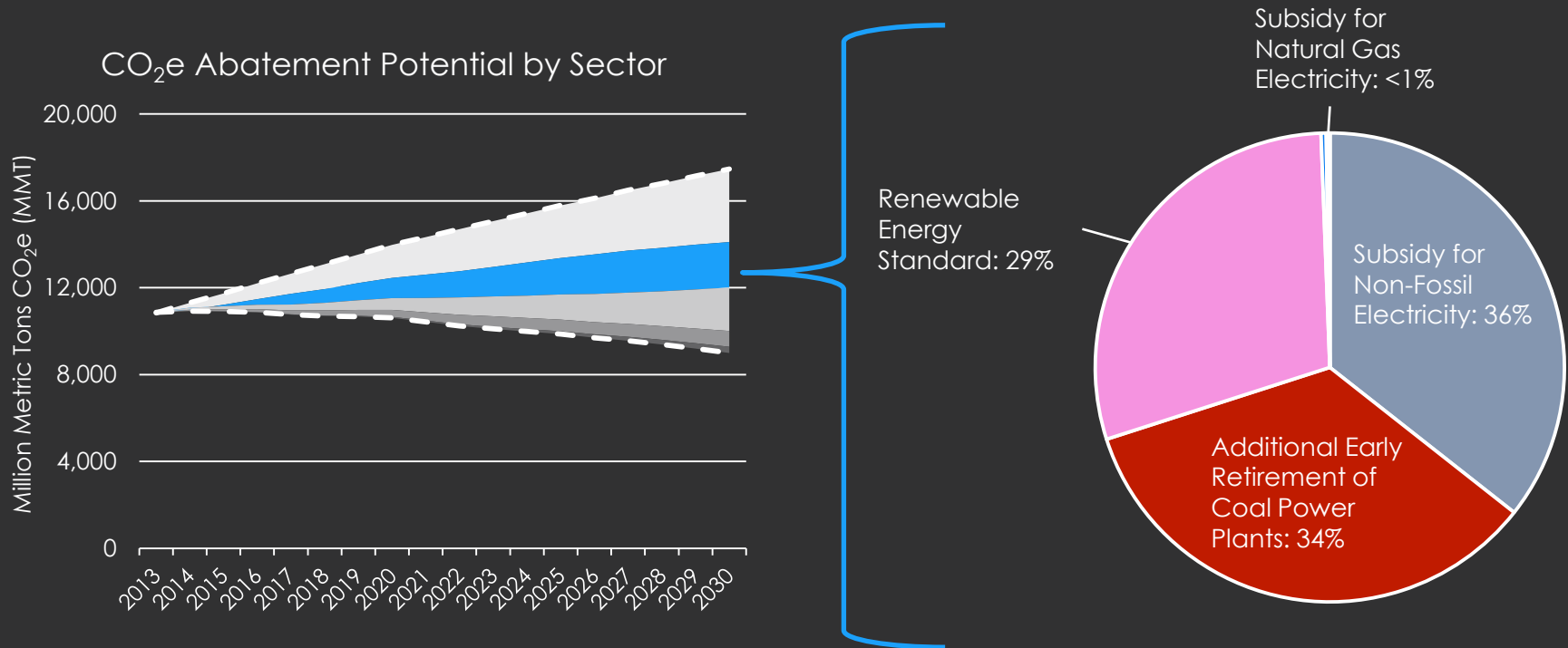
INDUSTRY SECTOR POLICIES

Strongest Policies: Reduced Demand for Industrial Products, Improved Industrial Equipment Efficiency, Avoided Venting of F-Gases



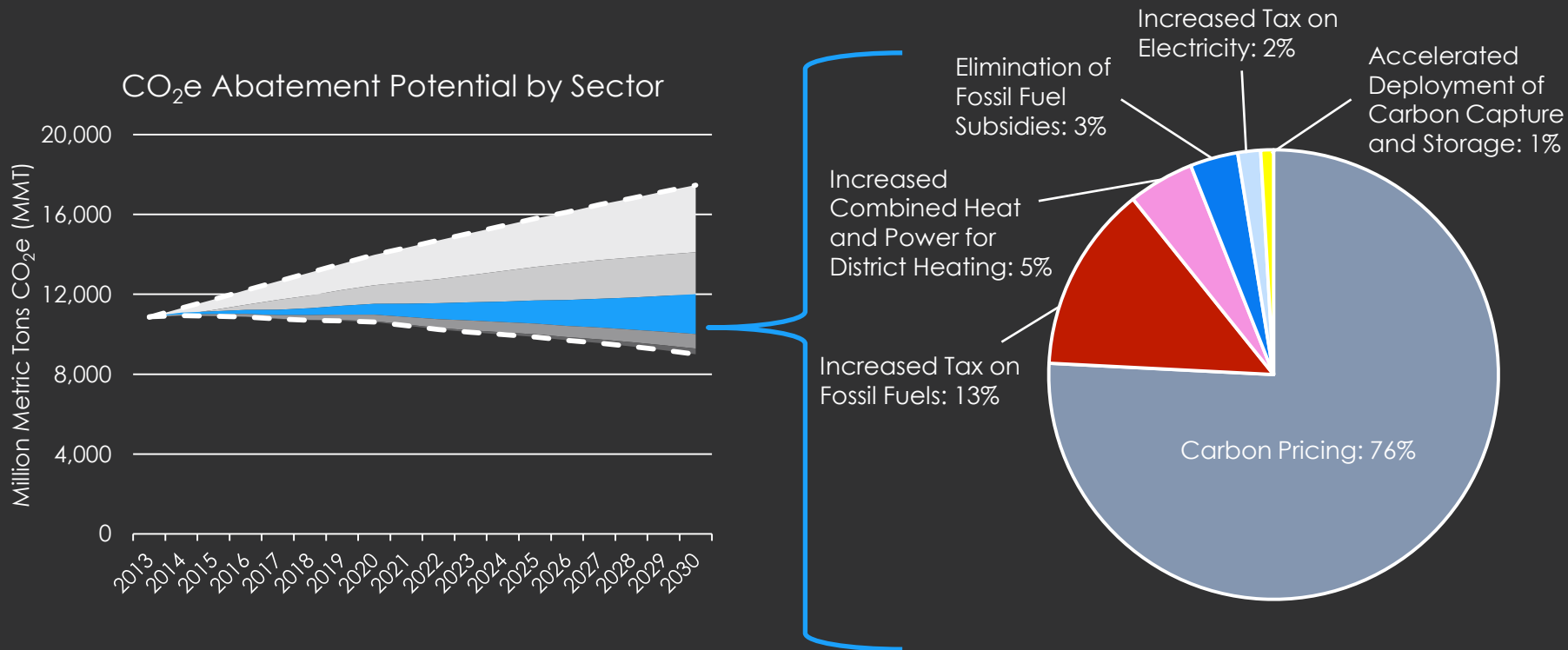
ELECTRICITY SECTOR POLICIES

Strongest Policies: Subsidy for Non-Fossil Electricity, Early Retirement of Coal Power Plants, Renewable Energy Standard



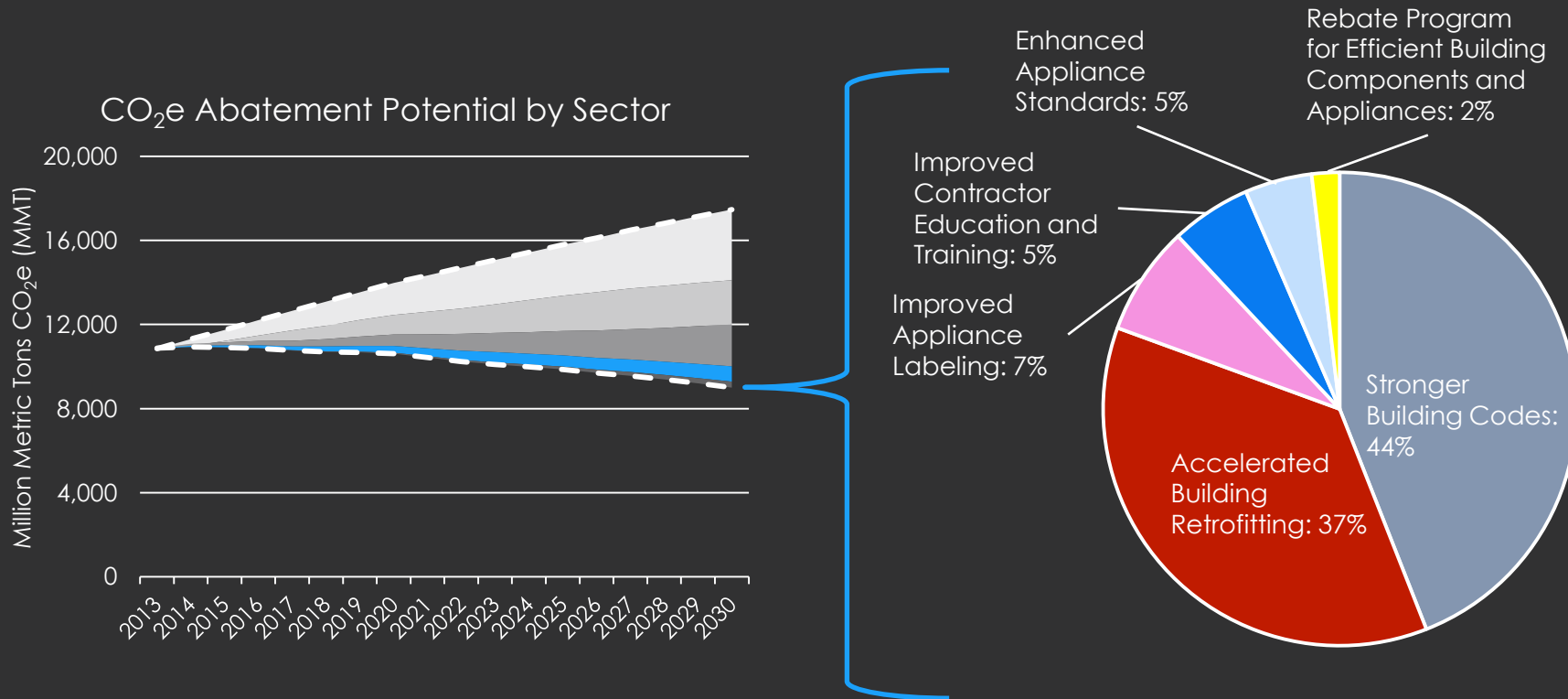
CROSS-SECTOR POLICIES

Strongest Policies: Carbon Pricing, Increased Tax on Fossil Fuels, Increased Combined Heat and Power for District Heating

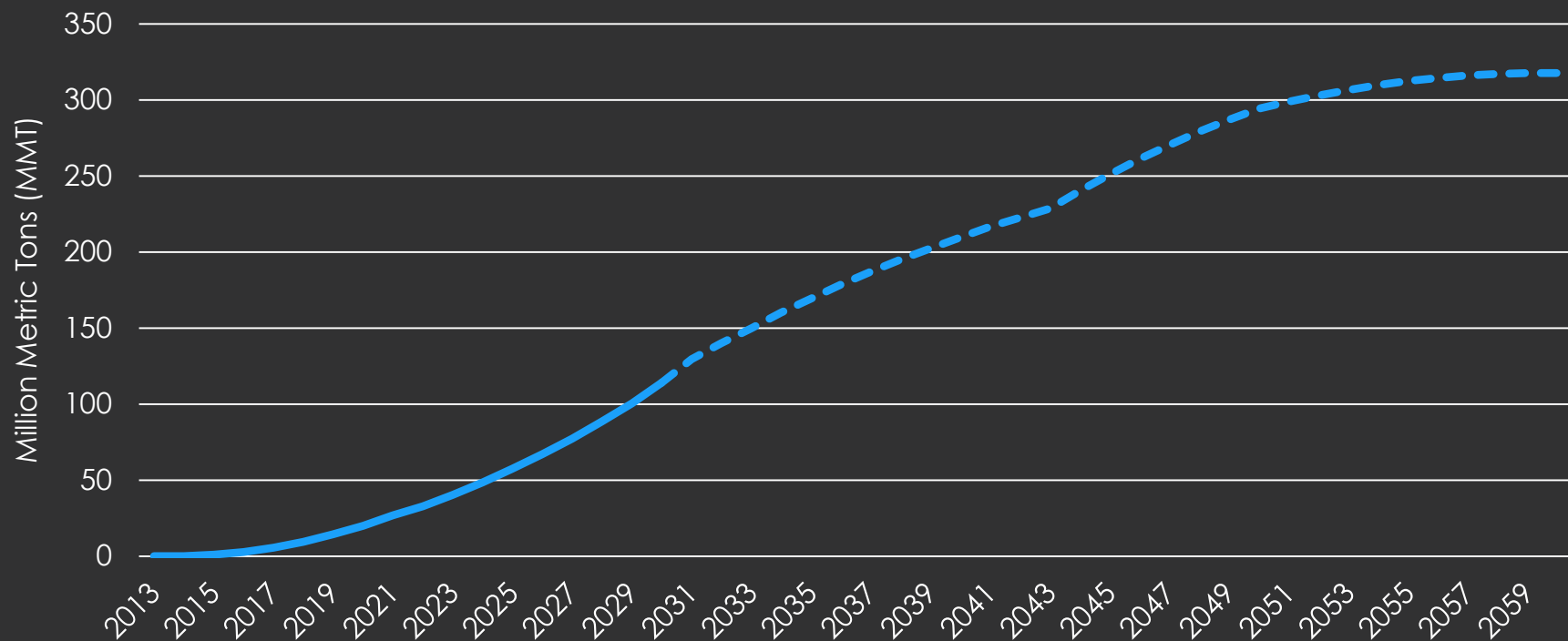


BUILDINGS SECTOR POLICIES

Strongest Policies: Building Codes, Building Retrofitting, Appliance Labeling

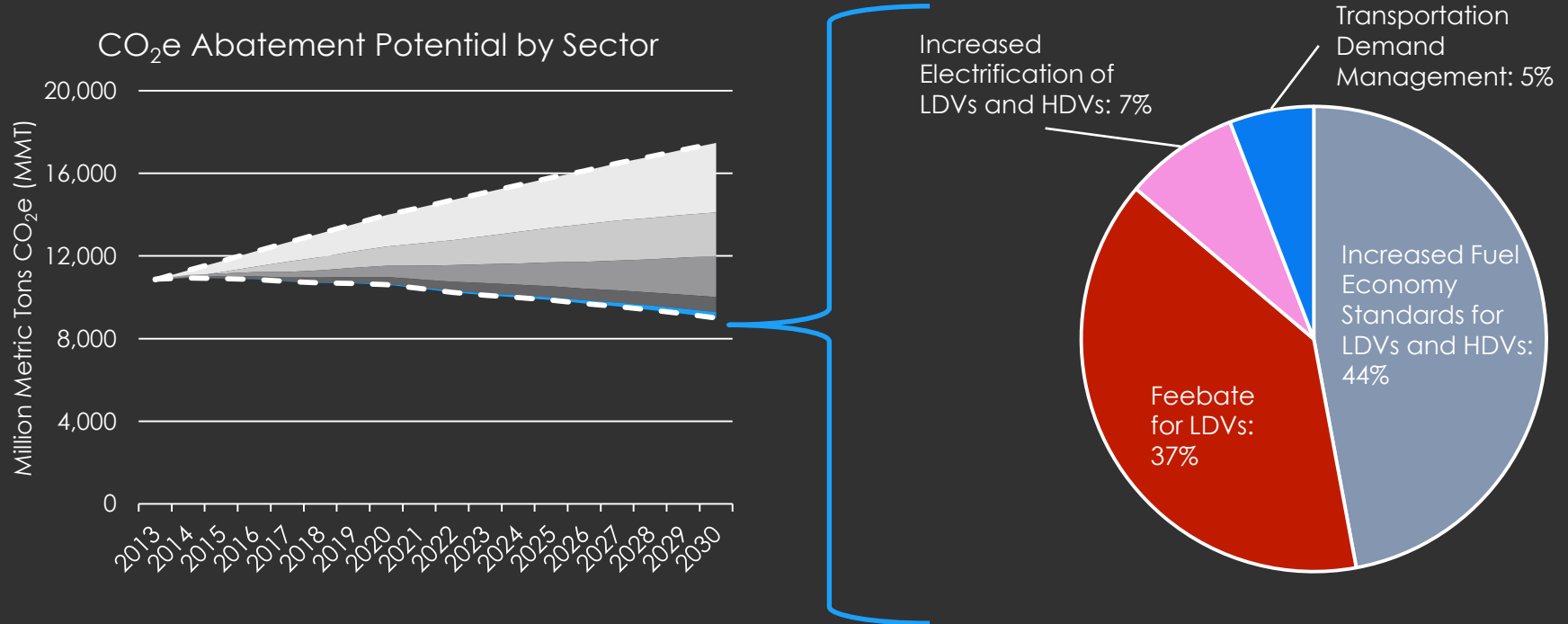


CO_{2e} SAVINGS FROM BUILDING CODES AND APPLIANCE STANDARDS

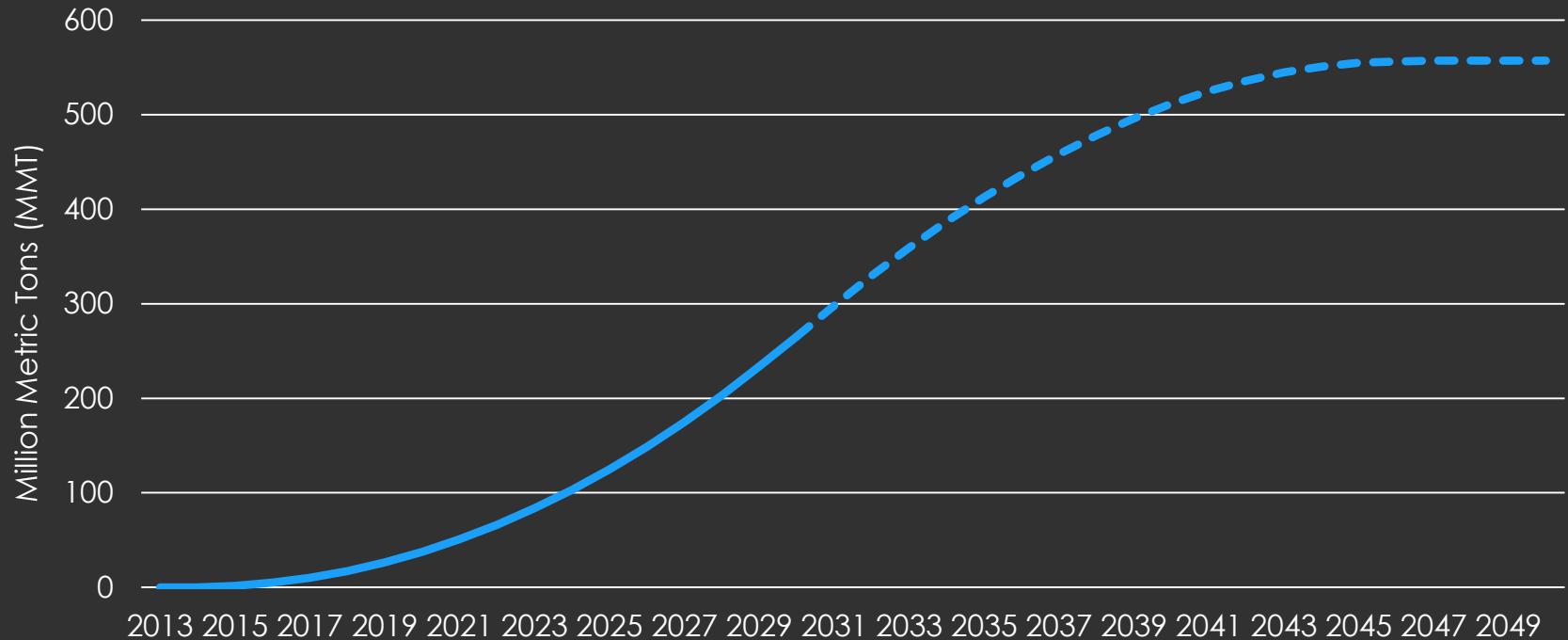


TRANSPORTATION SECTOR POLICIES

Strongest policies: Fuel Economy Standards for HDVs and LDVs, Feebate on LDVs



CO₂_e SAVINGS FROM FUEL ECONOMY STANDARDS



INSIGHTS FROM POLICY ANALYSIS

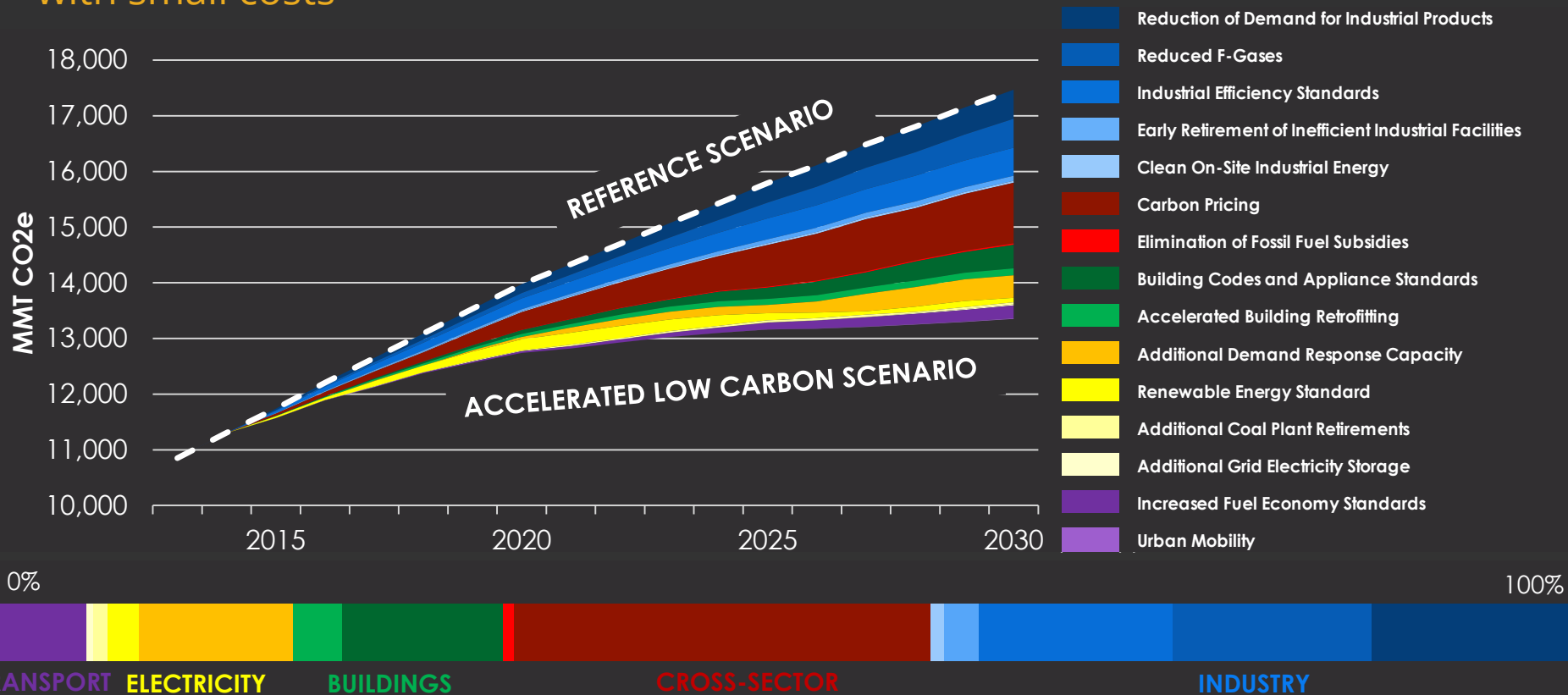
TOP 5 POLICIES FOR CARBON ABATEMENT

Based on carbon abatement potential and cost-effectiveness

1. Carbon Pricing
2. Increased Electricity Capacity Targets/Renewable Energy Standard
3. Stronger Building Codes
4. Industrial Product Demand Reduction
5. Reduced Venting of F-Gases

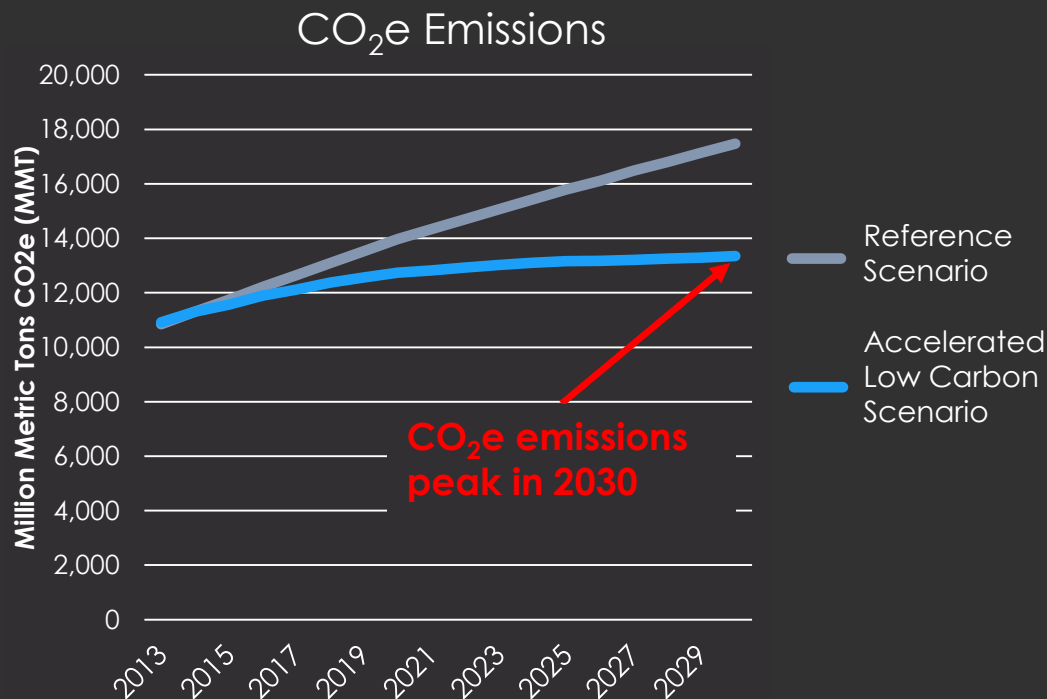
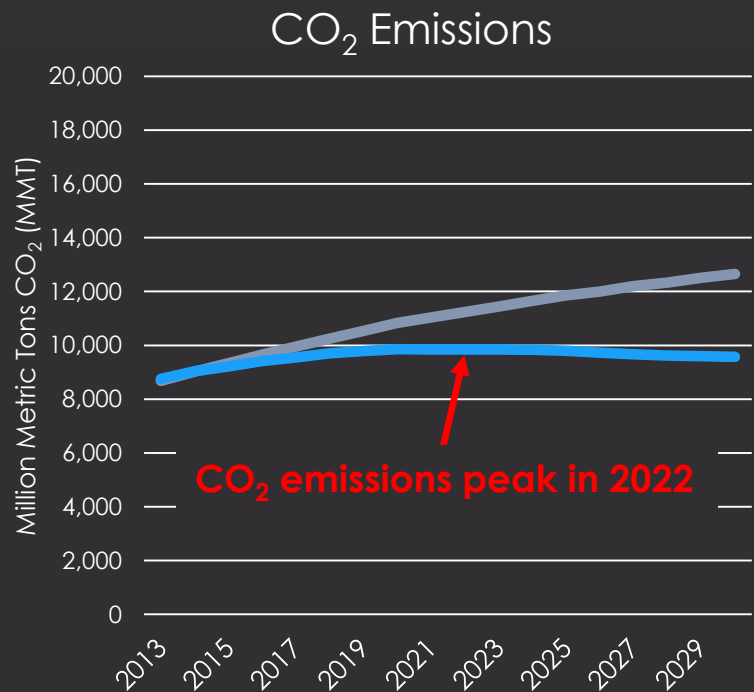
ACCELERATED LOW CARBON SCENARIO

A mix of the strongest and most-cost effective policies can peak CO₂e in 2030 with small costs



CHINA CAN PEAK CO₂e BY 2030 AND CO₂ EARLIER

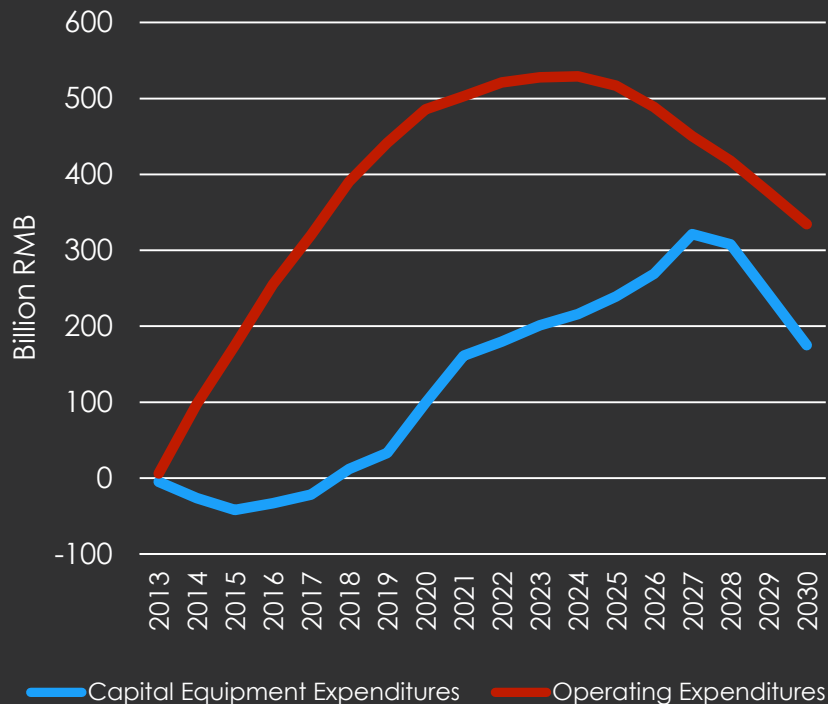
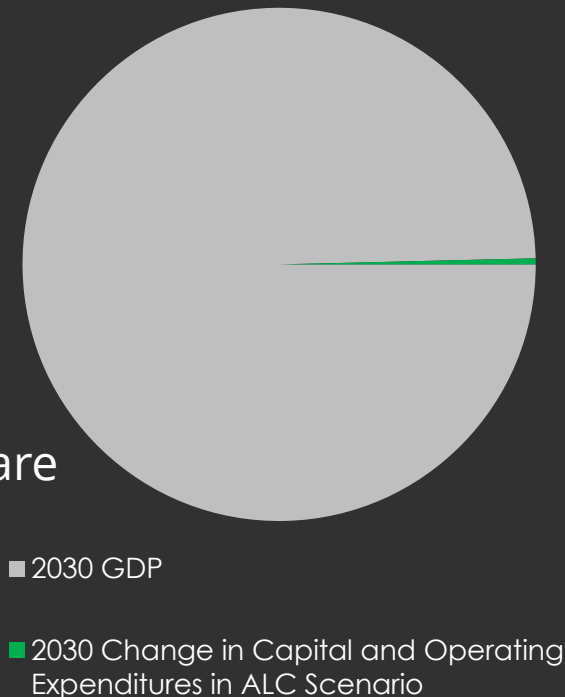
With a smart mix of policies, China can peak CO₂ emissions early and can peak all greenhouse gas emissions by 2030



CHINA CAN PEAK EARLY AT LOW COST

Peaking CO_2 in 2022 and CO_2e in 2030 costs less than half a percent GDP

Increased capital equipment and operating expenditures in Accelerated Low Carbon Scenario are 0.38% of GDP

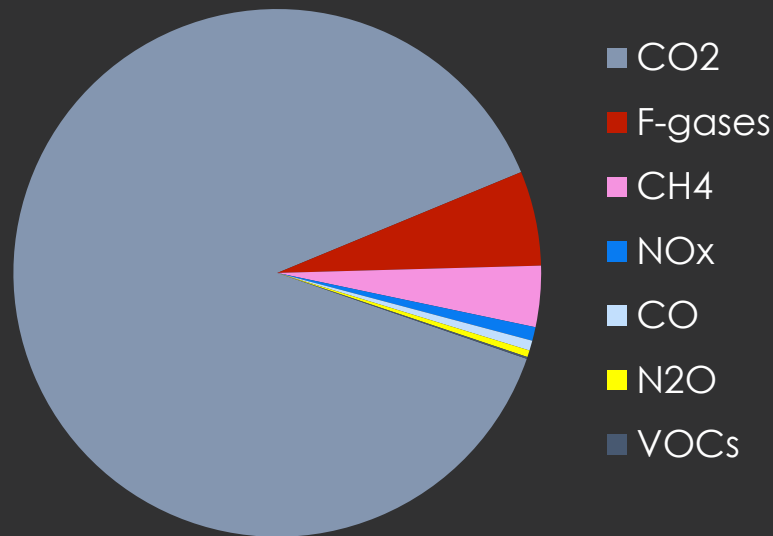


METHANE AND F-GASES ARE IMPORTANT

Methane and f-gases makeup a significant share of greenhouse gas emissions

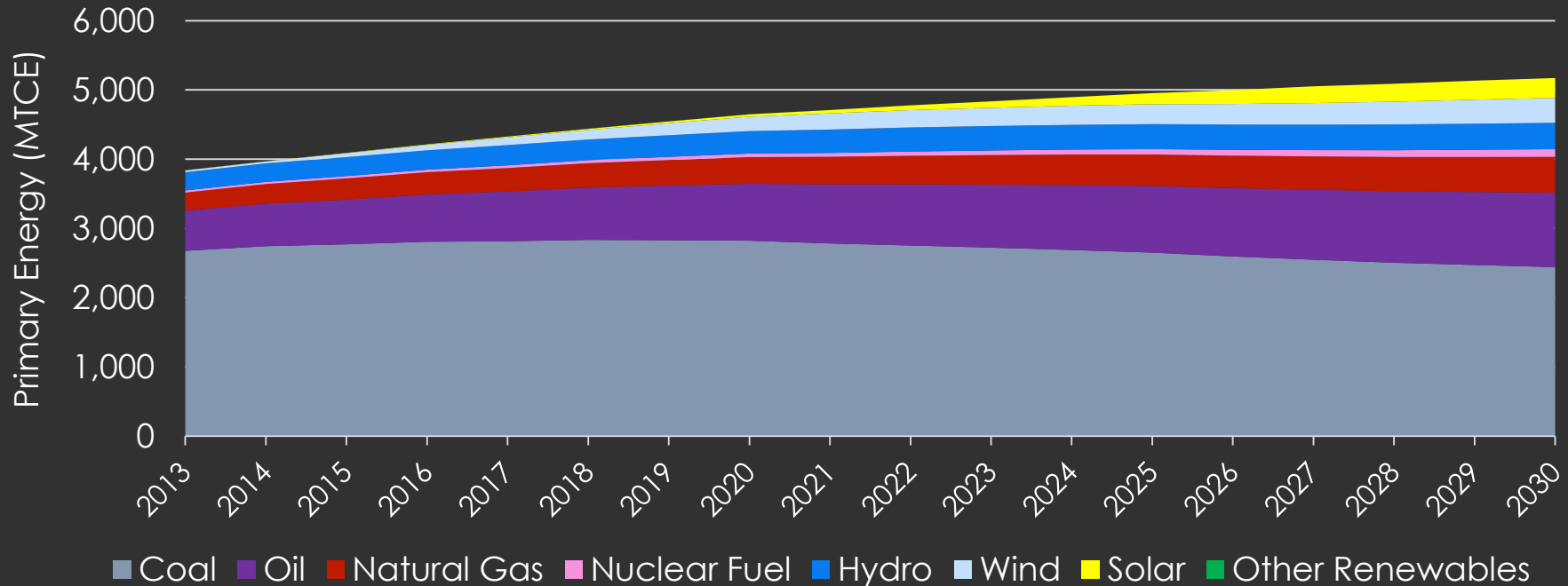
Pollutant	Percent of 2030 CO ₂ e
Carbon Dioxide (CO ₂)	88%
F-gases	5%
Methane (CH ₄)	4%
Others	<3%

2030 Reference Scenario CO₂e
Emissions by Pollutant



NATURAL GAS INCREASES COSTS WITH ONLY LIMITED ABATEMENT POTENTIAL

Accelerated Low Carbon Scenario Primary Energy Use





THANK YOU

SONIA AGGARWAL
WWW.ENERGYINNOVATION.ORG