ConocoPhillips

Addressing Uncertainty in Global Oil Demand

University of California at Davis
Sustainable Transportation Energy Pathways Annual Meeting

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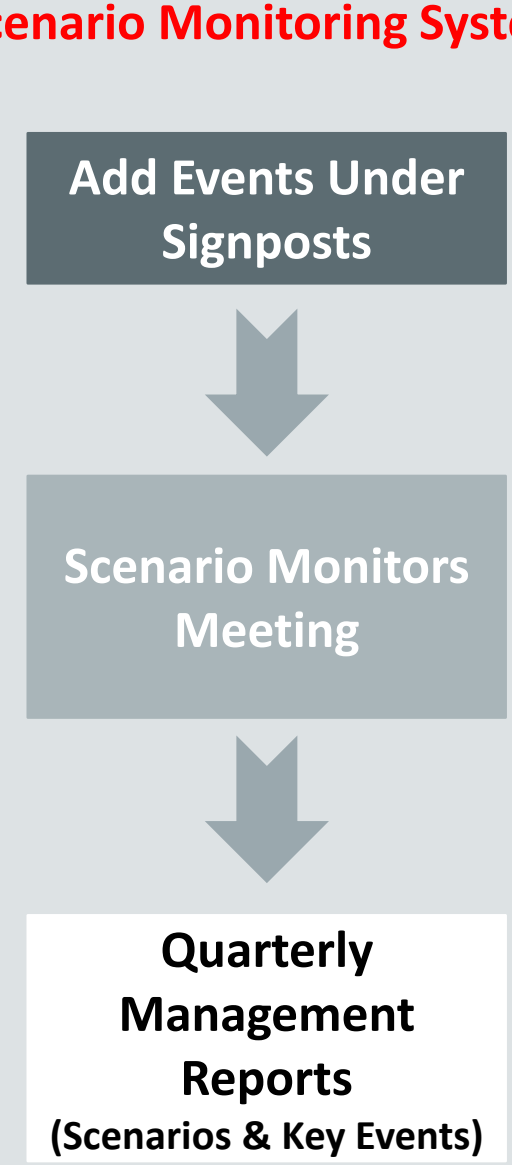
Use of Scenarios at ConocoPhillips

Use of Scenario Planning in ConocoPhillips

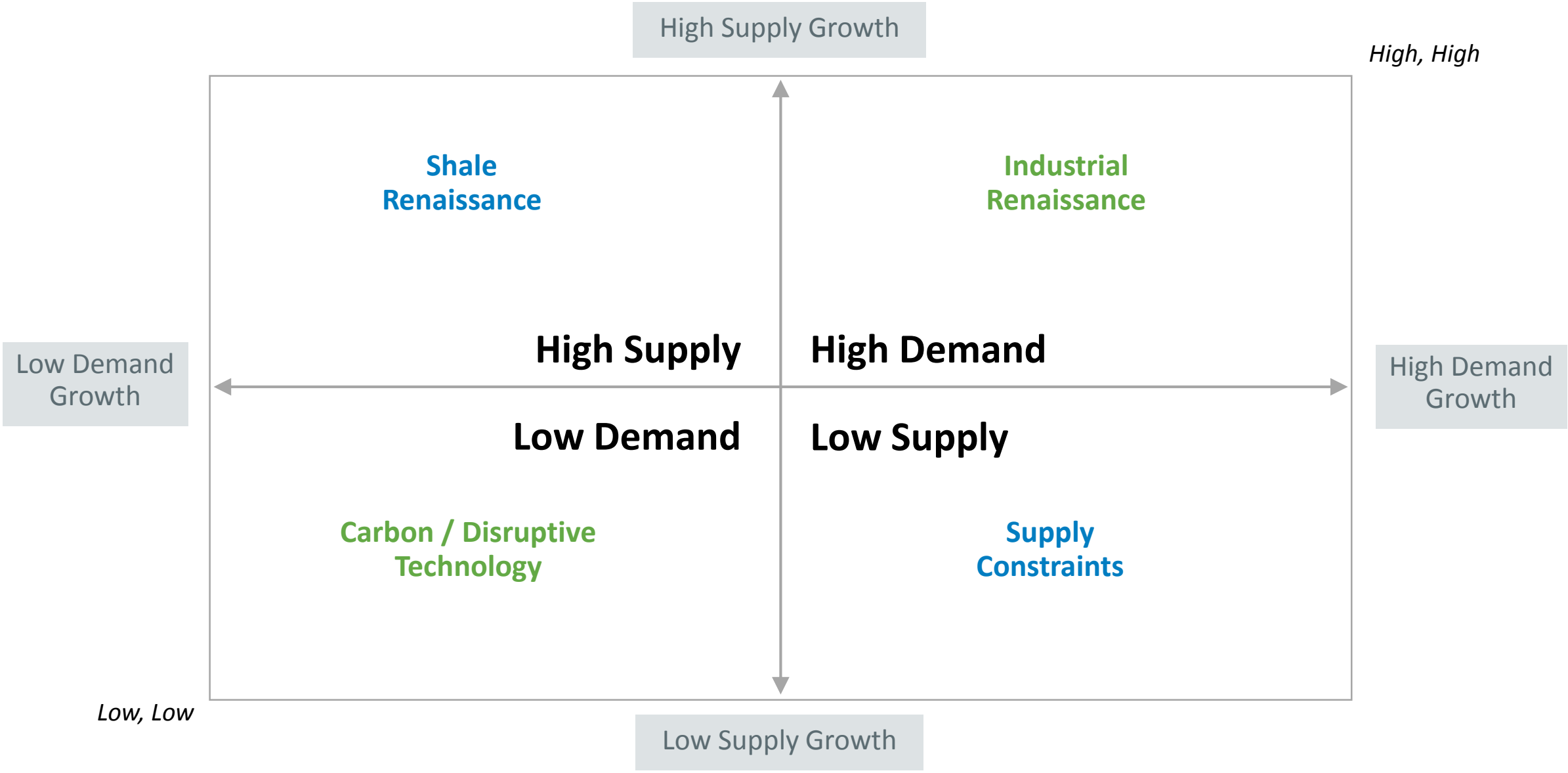
- Scenarios are used to:
  - Gain better understanding of external factors that impact our business
  - Test robustness of strategy across different business environments
  - Communicate risks appropriately
  - Adjust prudently to changes in the business environment
- Develop scenarios that are:
  - “Pure” -- to enable improved understanding of impact on ConocoPhillips
  - Sufficiently extreme that you may need to alter your strategy
  - Consider both negative and positive scenarios
- Process recognizes that hybrid scenarios, or moving between scenarios over time, is more likely
  - Premium on capital flexibility and financial strength
- Formal scenario monitoring

Scenario Monitoring System

- Monitor all the scenarios we develop
- Company intranet-based system
- Develop signposts for scenarios
- ~40 internal experts assigned to specific signposts
- System tallies number and intensity of events to indicate scenario vectoring
- Tracking reports sent to the Executive Leadership Team on quarterly basis



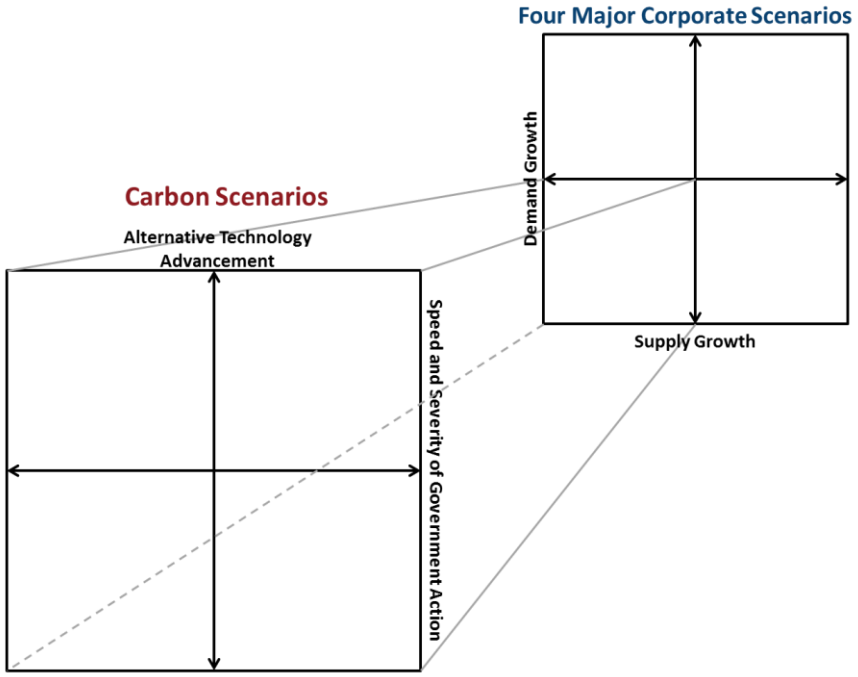
Oil and Natural Gas Scenario Framework



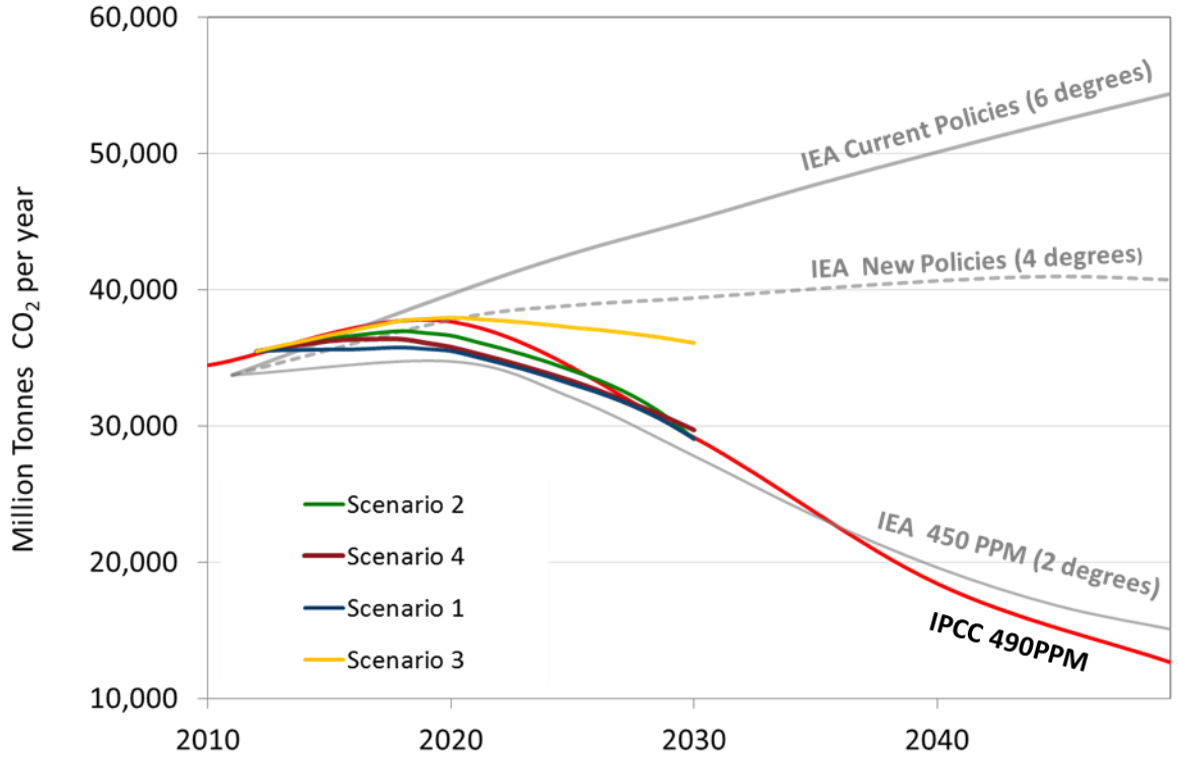
Oil Demand Scenarios

Carbon Scenarios

Building resiliency to a range of possible outcomes



Emission Trajectories



Source: IEA (International Energy Agency), IPCC (Intergovernmental Panel on Climate Change), COP Primary Energy Model

3 scenarios follow the IPCC 2 degree trajectory - we use these scenarios to 'stress test' our portfolio

Example of Carbon Constrained Demand Scenario: Key Drivers

Technology

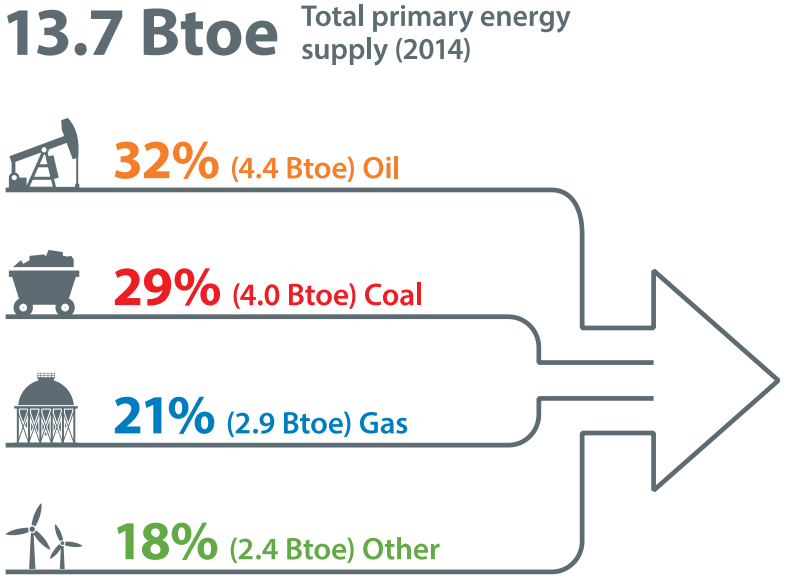
- Breakthroughs improve efficiency and drive the adoption of alternatives to oil and gas
  - Efficiency improvement in transportation and electric power use
  - Electric vehicles adoption
  - Renewable power adoption

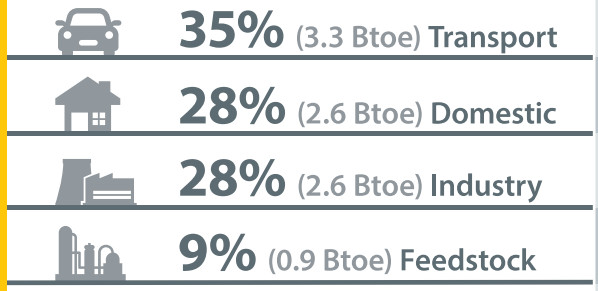
Government Policies

- Policies to reduce air pollution and GHG emissions increase the penetration of disruptive technologies
  - Consistent with emission trajectories to limit rise in long-term average global temperature to 2°C

Current Energy Supply and Use

Substitution by non-carbon fuels has been minimal for transportation and industrial uses.



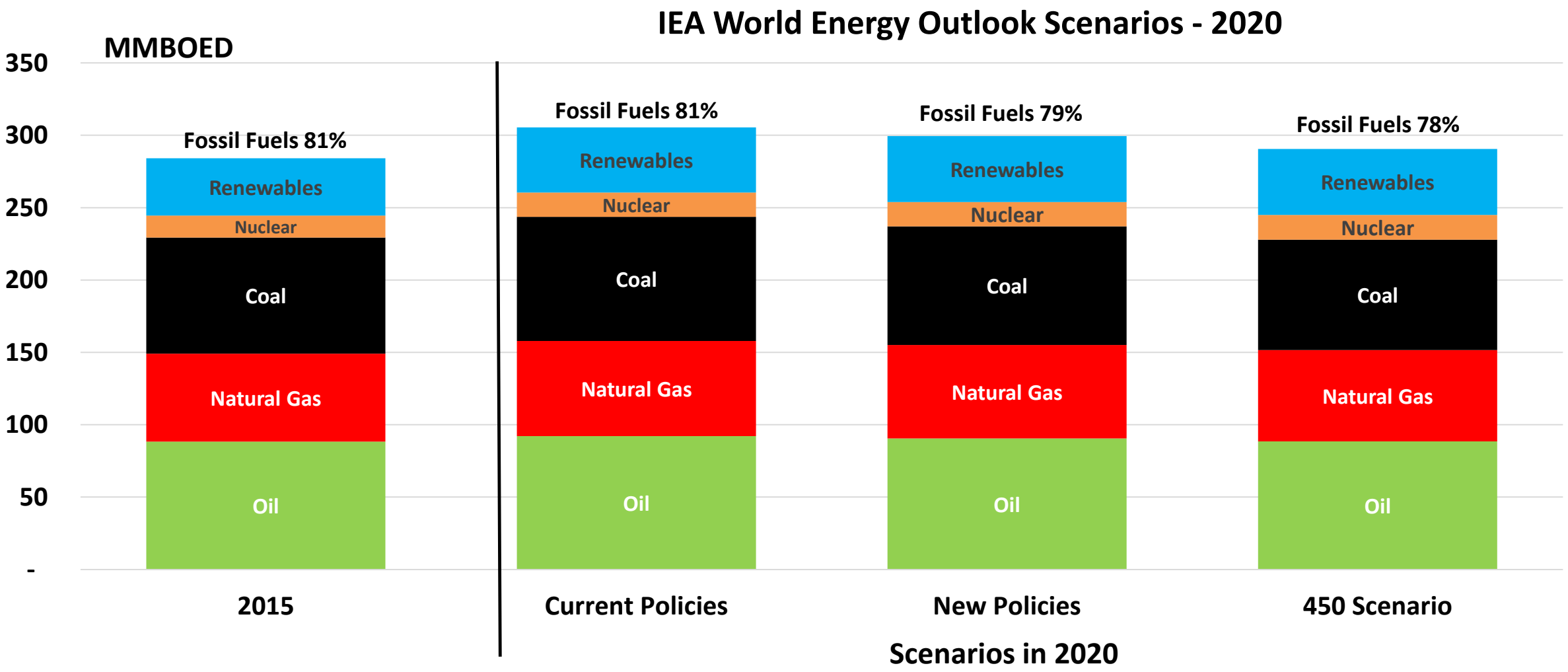


Fuel Shares	Oil	Coal	Gas	Other	Electricity
	92%	0%	4%	3%	1%
	14%	4%	20%	28%	34%
	12%	34%	18%	7%	29%
	64%	10%	26%	0%	0%
Total Btoe	4.2	1.1	1.4	1.0	1.7
Total Share	45%	12%	15%	11%	18%

Notes: IHS Energy estimated total global primary energy supply and demand by market segment and fuel type in 2014, including the shares of total primary consumption of oil, coal, natural gas, and "other" energy types (nuclear/renewables/hydro/biomass and waste). Fuel inputs into the production of power and hear are captured as well as losses associated with the transformation of the primary fuels. The simplified chart focuses on the main end-user segments: transport; the domestic sector, which includes the residential and commercial subsectors; industry; and feedstocks, and the contributions of different energy types in meeting those segment needs today. Substitution by non-carbon fuels has been minimal for transportation (92% oil) and industrial feedstocks (100% oil, gas and coal).
Source: IHS

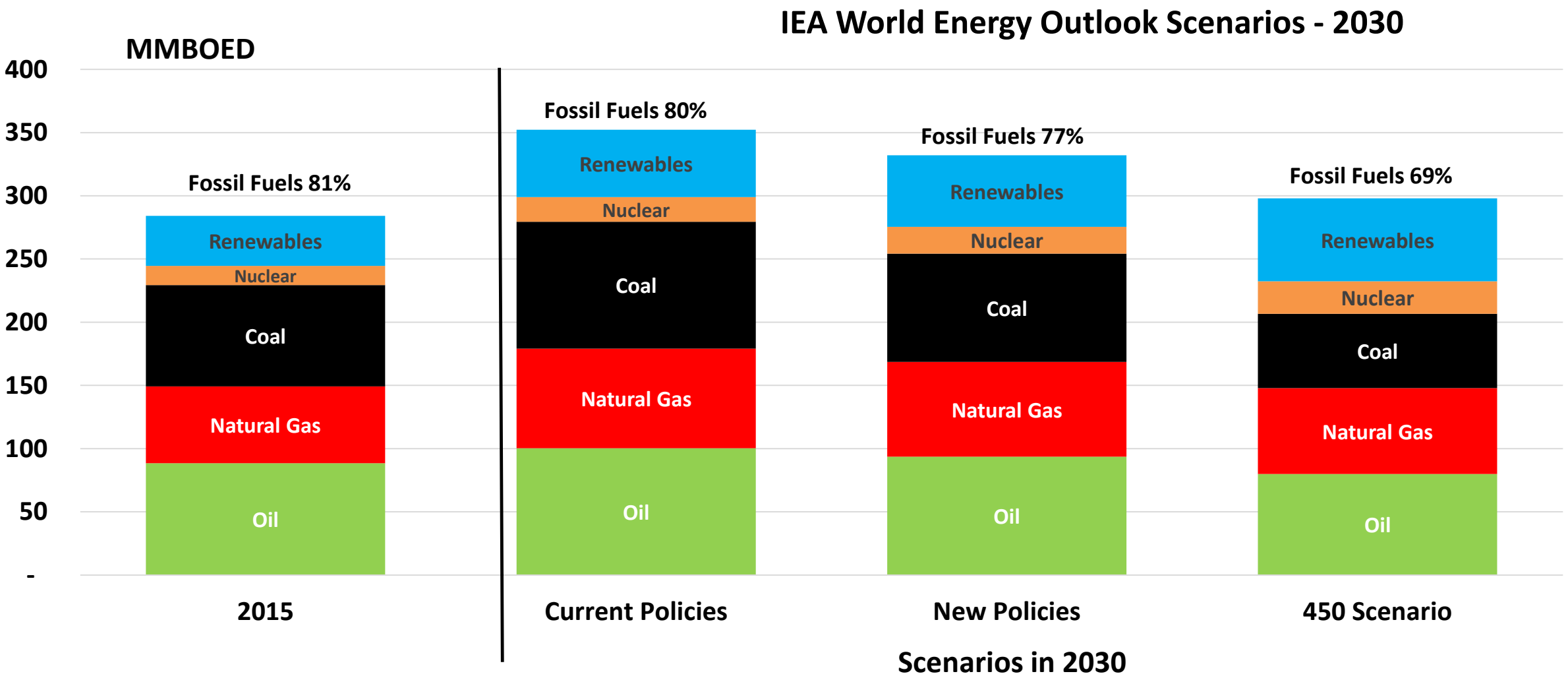
- Electricity only accounts for 18% of final consumption
- Oil and Natural Gas make up 96% of transportation fuels
- Almost two-thirds of industry utilizes fossil fuels

2020 World Energy Outlook



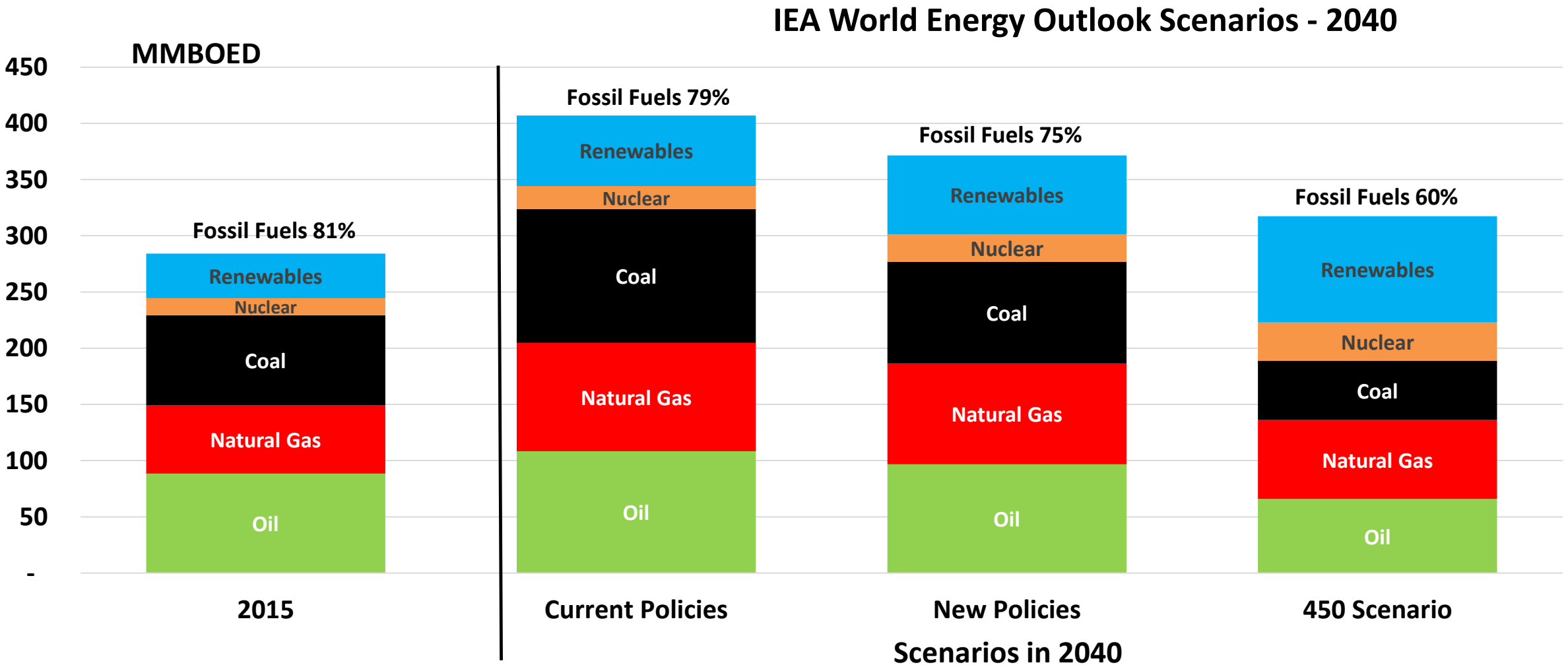
Oil demand in 2020 is flat with 2015 demand in IEA's 450 Scenario but grows in the other scenarios

2030 World Energy Outlook



Oil demand in 2030 falls by 8% vs. 2015 in IEA's 450 Scenario but grows in the other scenarios

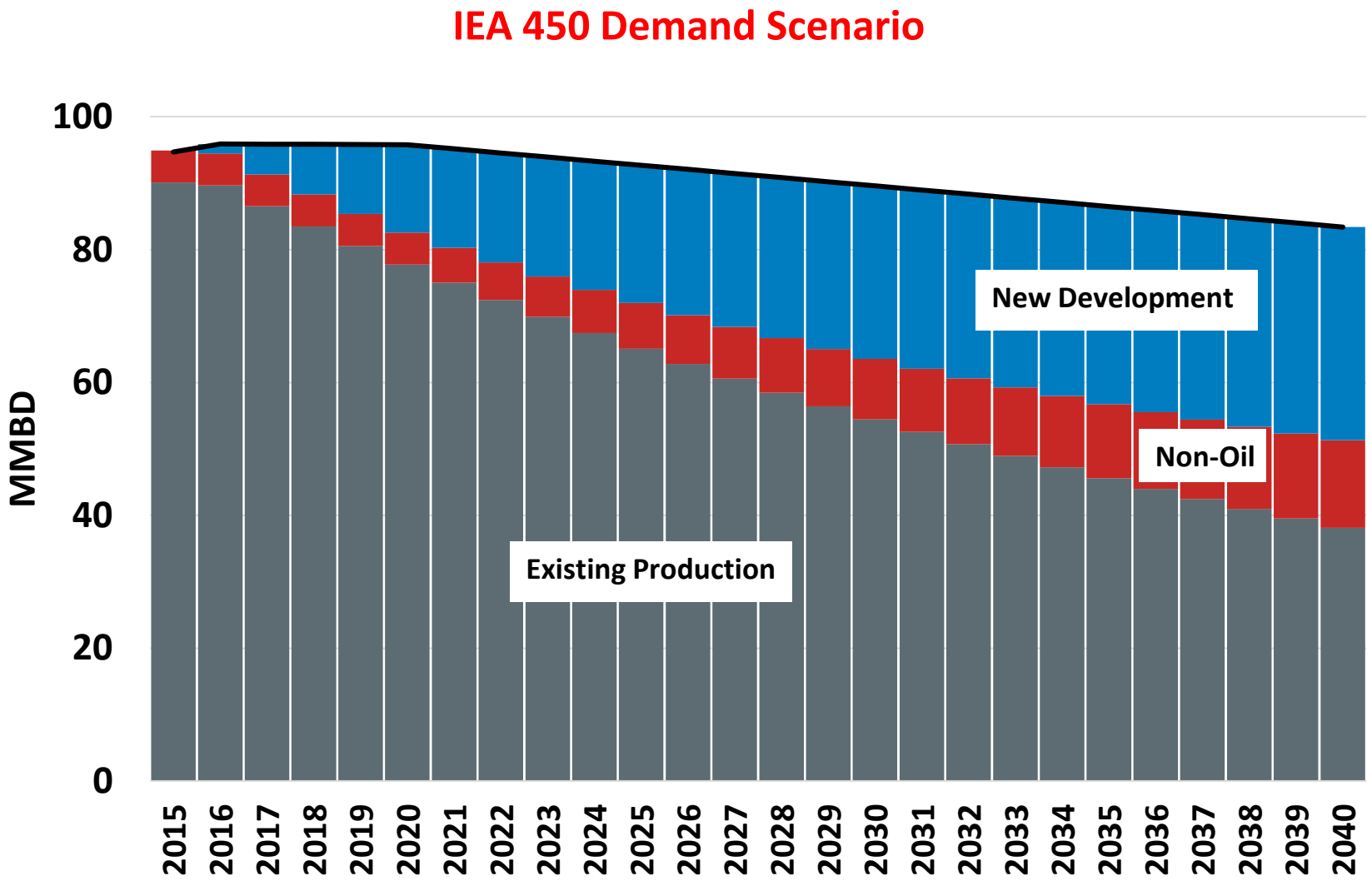
2040 World Energy Outlook



Oil demand in 2040 falls by 25% vs. 2015 in IEA's 450 Scenario and grows by 25% in the Current Policy scenario

Natural gas demand rises and gains market share in IEA's 450 Scenario

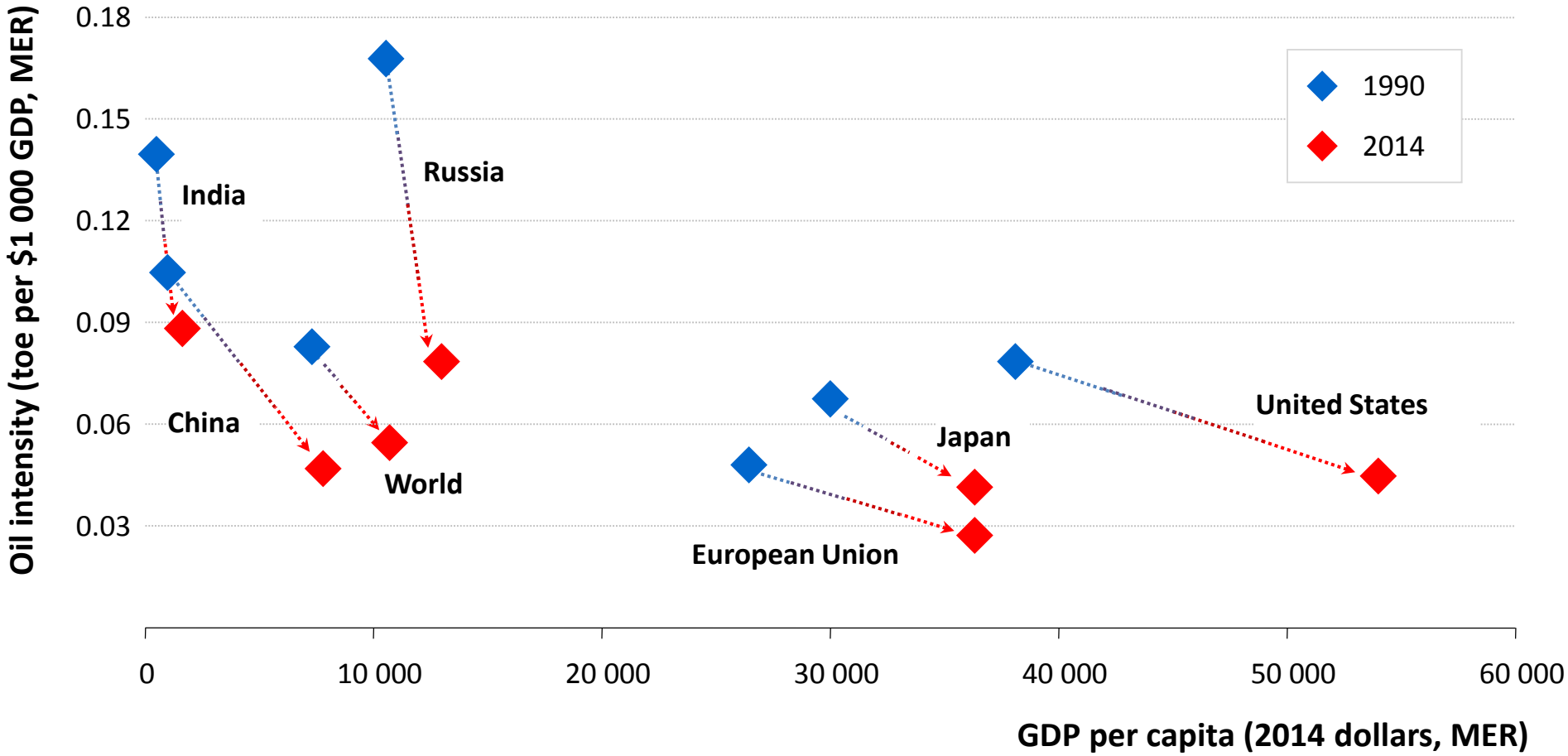
New Developments Needed to Meet 450 Oil Demand Scenario



- Even with declining oil demand in IEA 450 scenario substantial volumes of new oil supplies will be needed to meet demand in 2040
- New Developments needed total nearly 200 trillion barrels by 2040 requiring Investment of approximately $10 trillion USD (2015).

Notes/Sources: Crude/NGLS , Rystad Low Price Case (May 9, 2016). Other = Processing Gains + Biofuels+ Coal-to-Liquids+ Gas-to-Liquids, IEA 450 Supply Scenario w/ linear extrapolation. 450 Demand Scenario, IEA WEO 2015. New Developments = 450 Demand Scenario – Crude/NGL – Other. Investment estimate based on IEA New Policies and 450 Supply Secanrios

Trends in Oil Intensity & GDP Per Capita

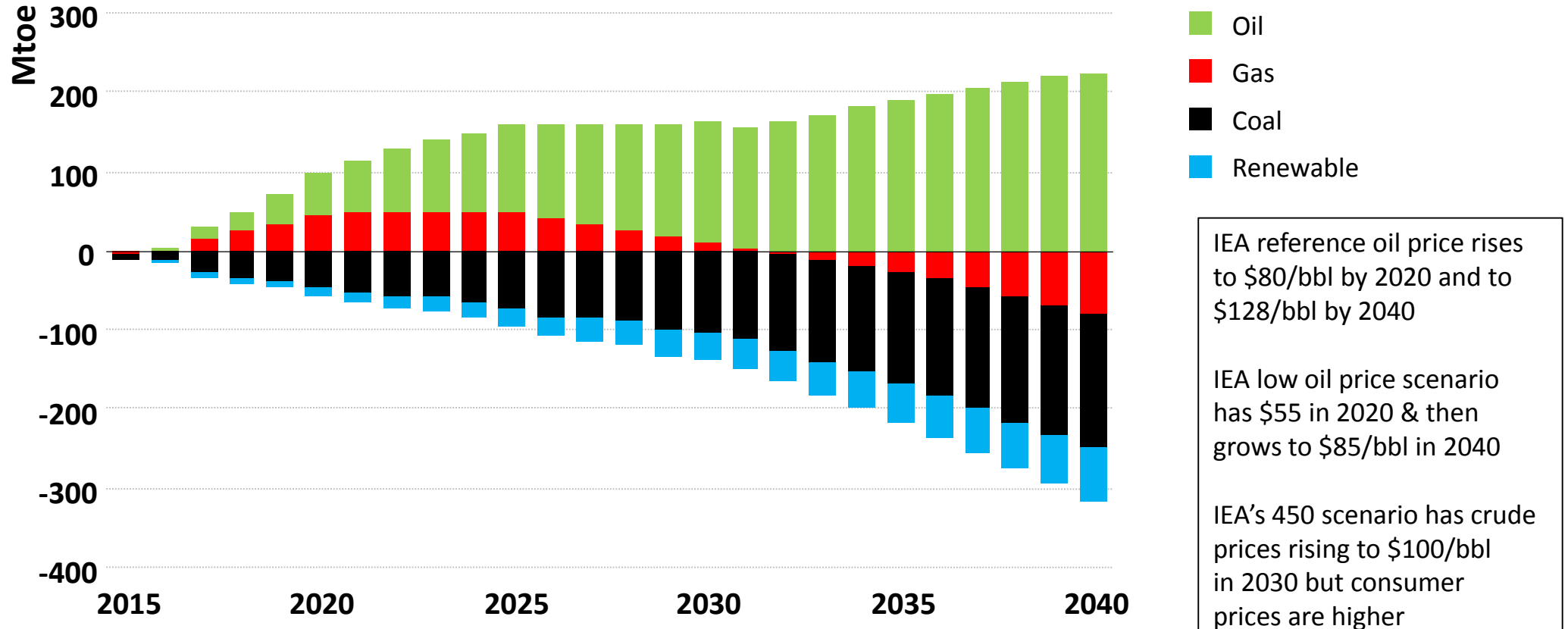


Oil intensity has seen steeper declines than total energy intensity, both in developed & emerging economies

Source: IEA, World Energy Outlook 2015, slide deck

Lower Oil Prices Affect the Competitiveness of Fuels

Change in global primary energy demand by fuel in the Low Oil Price Scenario relative to the New Policies Scenario



IEA reference oil price rises to $80/bbl by 2020 and to $128/bbl by 2040

IEA low oil price scenario has $55 in 2020 & then grows to $85/bbl in 2040

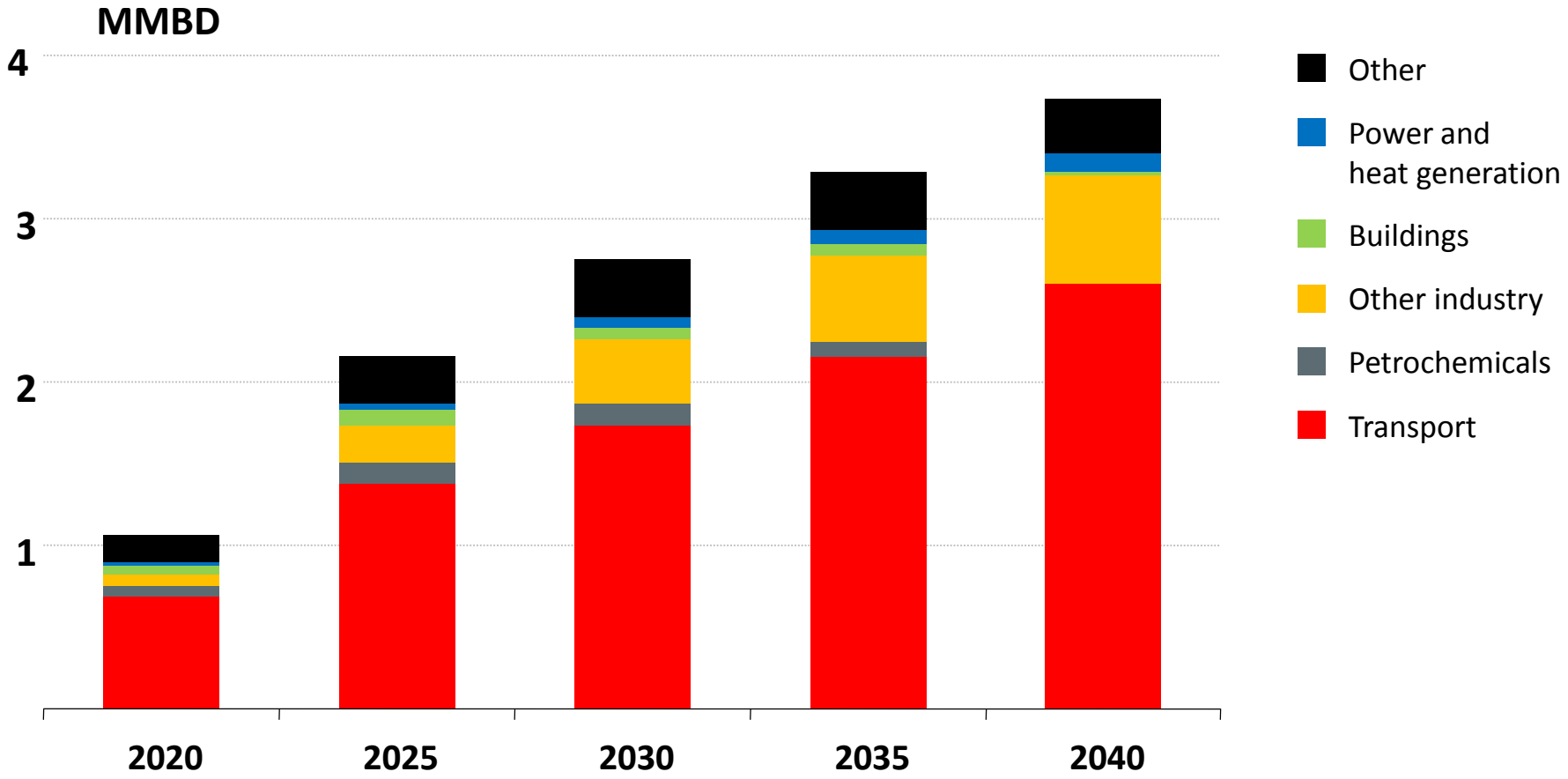
IEA's 450 scenario has crude prices rising to $100/bbl in 2030 but consumer prices are higher

As well as increases in oil, natural gas benefits (for a while), particularly in regions where import prices are indexed to oil: with coal pushed out in the power sector

Source: IEA, World Energy Outlook 2015, slide deck

Transport Leads the Ramp Up in Demand

Change in global oil demand by sector in the Low Oil Price Scenario relative to the New Policies Scenario

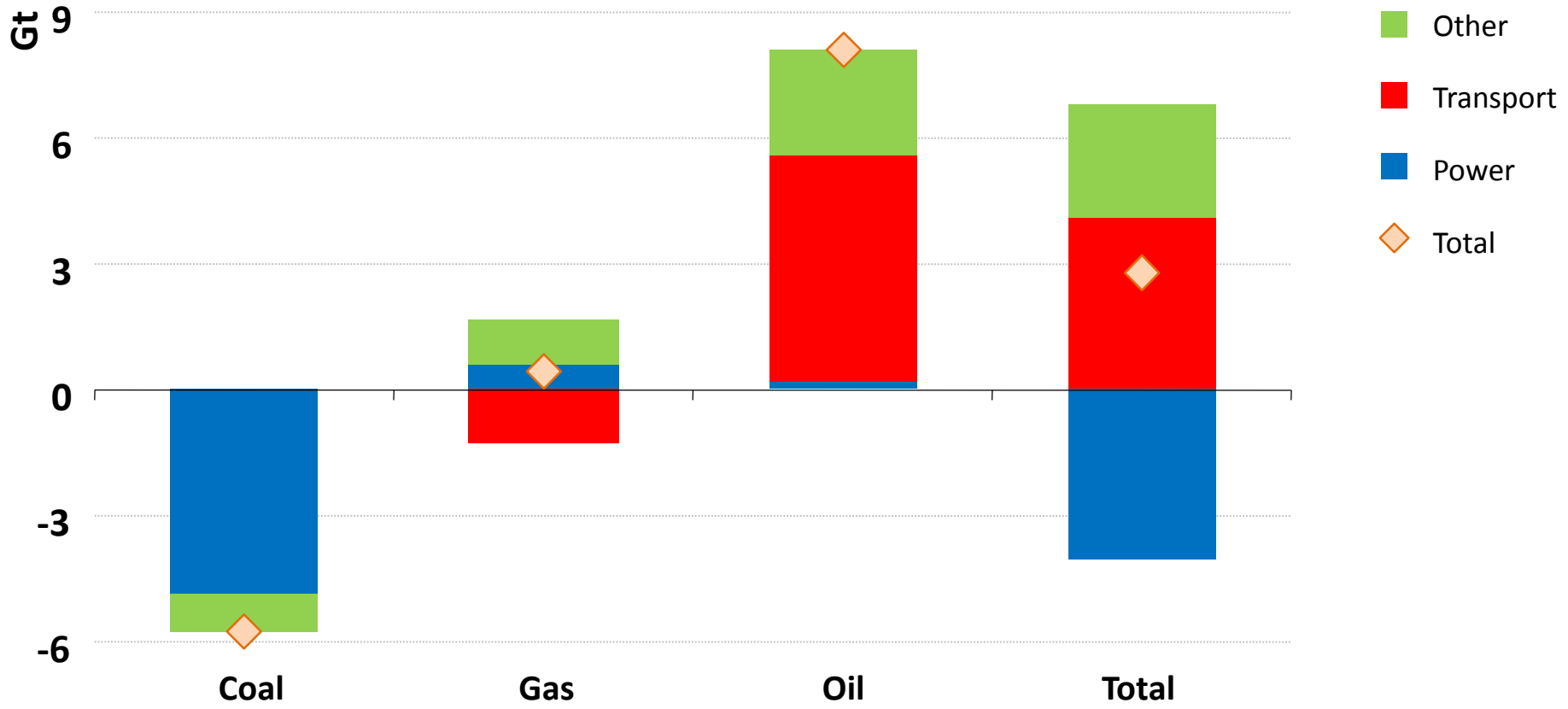


Use of cars and trucks increases, there is a slower pace of improvement in the efficiency of vehicles and aircraft, and more limited switching to alternative fuels

Source: IEA, World Energy Outlook 2015, slide deck

Lower Prices Complicate the Low-Carbon Transition

Change in cumulative global energy-related CO_2 emissions
in the Low Oil Price Scenario relative to the New Policies Scenario, 2014-2040

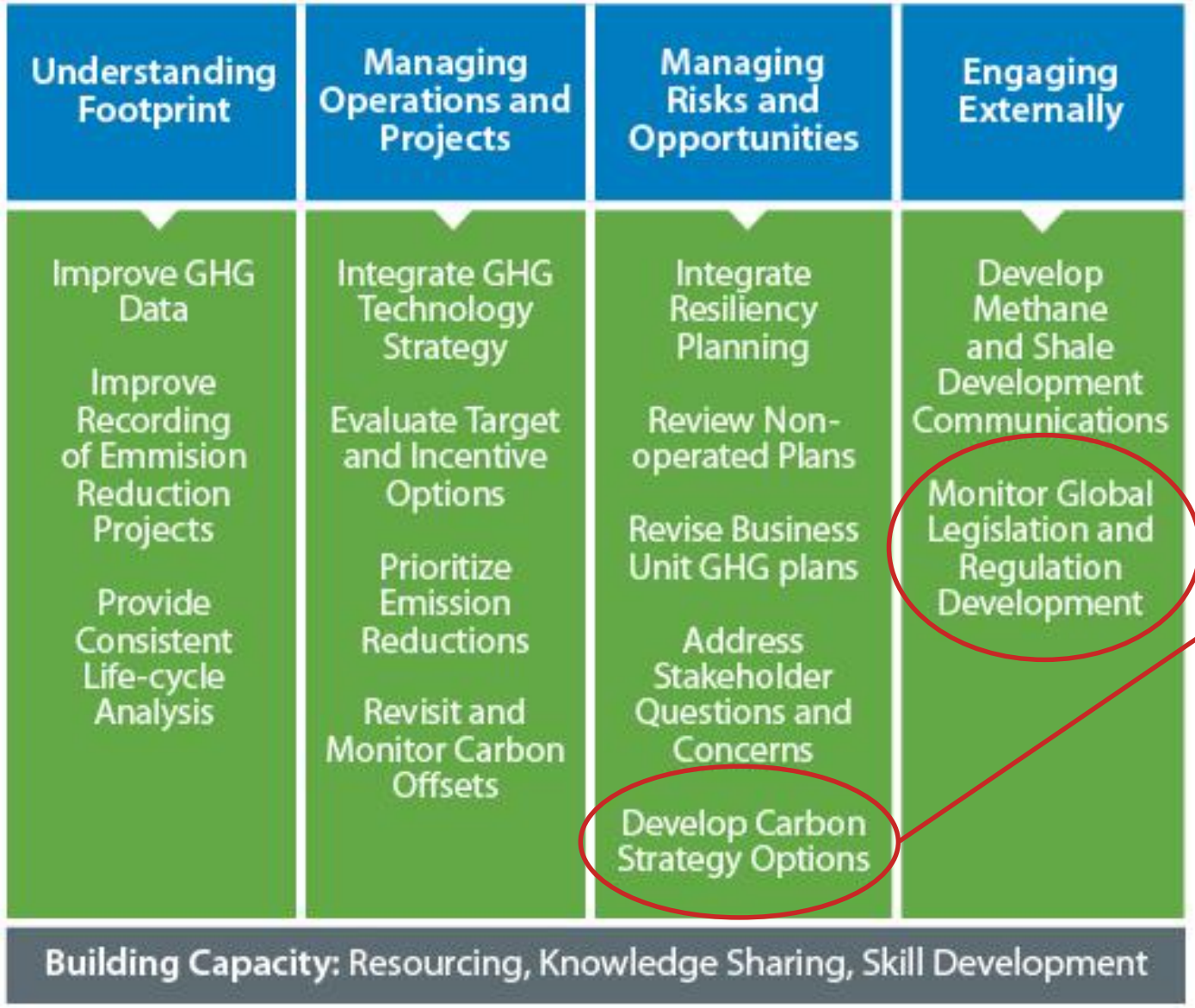


While coal use declines, the deployment of alternatives to oil in transport decreases, & 15% of energy efficiency improvements are lost, pushing overall emissions up

Source: IEA, World Energy Outlook 2015, slide deck

COP’s Climate Action Plans

ConocoPhillips' Climate Change Action Plan



Scenario development and monitoring are key elements of our planning process

ConocoPhillips' Performance

- Understanding our Footprint and Reducing Emissions.
  - Kept GHG emissions flat since 2009: ~28 million tonnes CO_2 equivalent (adjusted to remove data for dispositions from all years).

- Focusing Reduction Efforts using Global Prioritization.
  - Key areas for reductions are methane, flaring, and fuel switching.
  - Investing in oil sands emission reduction technology.

- Supporting New Solutions:
  - **COSIA's XPRIZE:** oil sands industry seeking innovative solutions to CO_2 emissions.

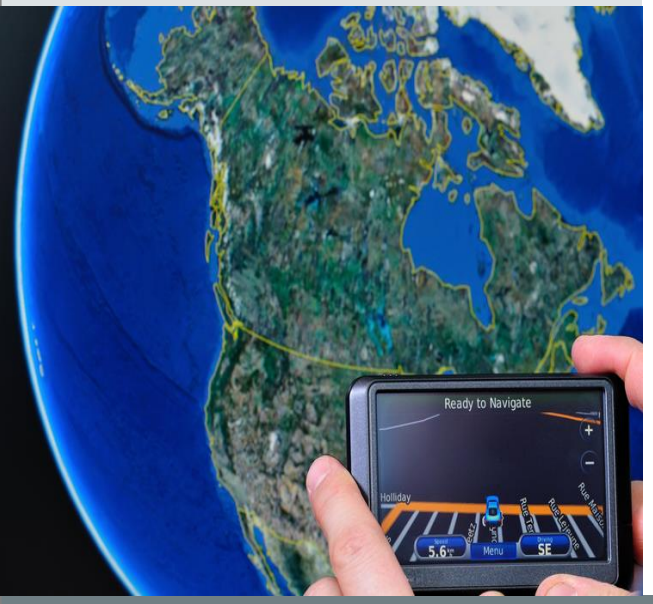
Oil and Gas Companies are Taking Action

- Carbon intensity slightly up
  - Mature fields, unconventional reserves, heavier oil, LNG, more remote locations
- Reducing emissions
  - Reducing methane venting, flaring, replacing equipment
  - Cogeneration, fuel switching and innovative energy management
- More companies focus on reducing emissions in specific businesses
  - … rather than company-wide GHG emissions targets
- Industry advancing carbon capture and storage
  - Involved in 9 of the 13 large-scale operational CCS projects globally

Insights

2020-2030
WIDE RANGE
OF SCENARIOS
POSSIBLE

WHAT WINS?
LOW-COST,
FLEXIBLE OPTIONS



- Company's analysis of external market uncertainties prepares us to adjust quickly to movements in scenarios
- Company prepares for:
  - Wide range of uncertainty on demand and prices
  - High, short-term price volatility
  - Shorter cycle times
- Little changes to oil demand prior to 2020
- Global natural gas demand holds up better than oil demand in the carbon scenarios
- Low-cost and flexible supply options win