

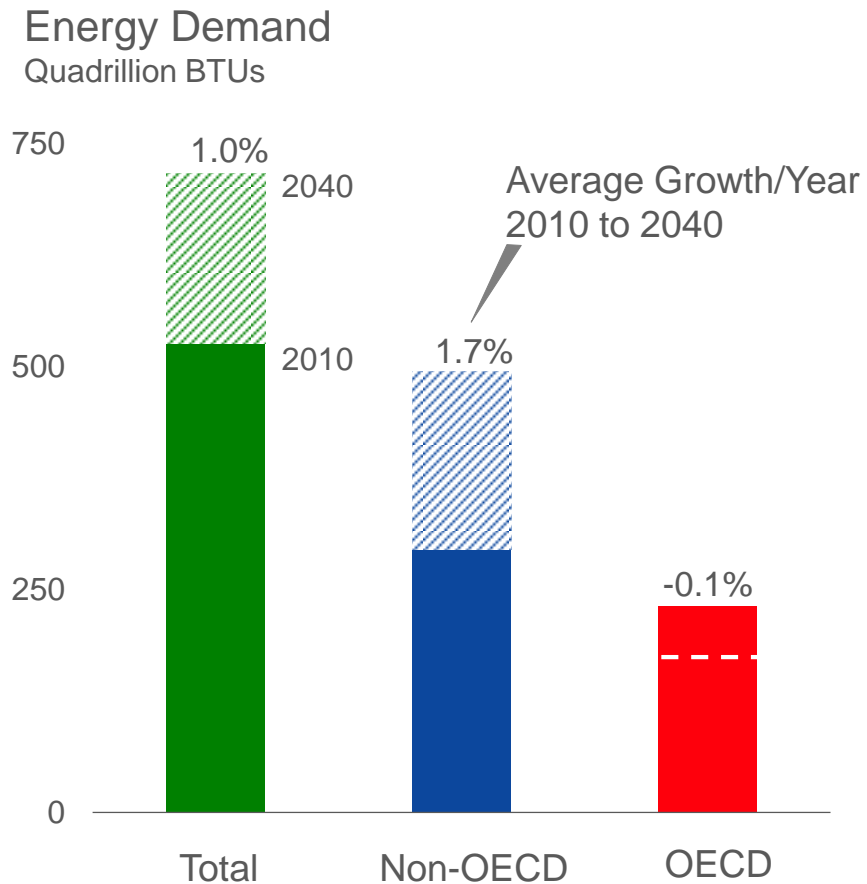
July 2015

Energy and climate change

Energy lives here™

Global energy demand expected to grow about 35% by 2040

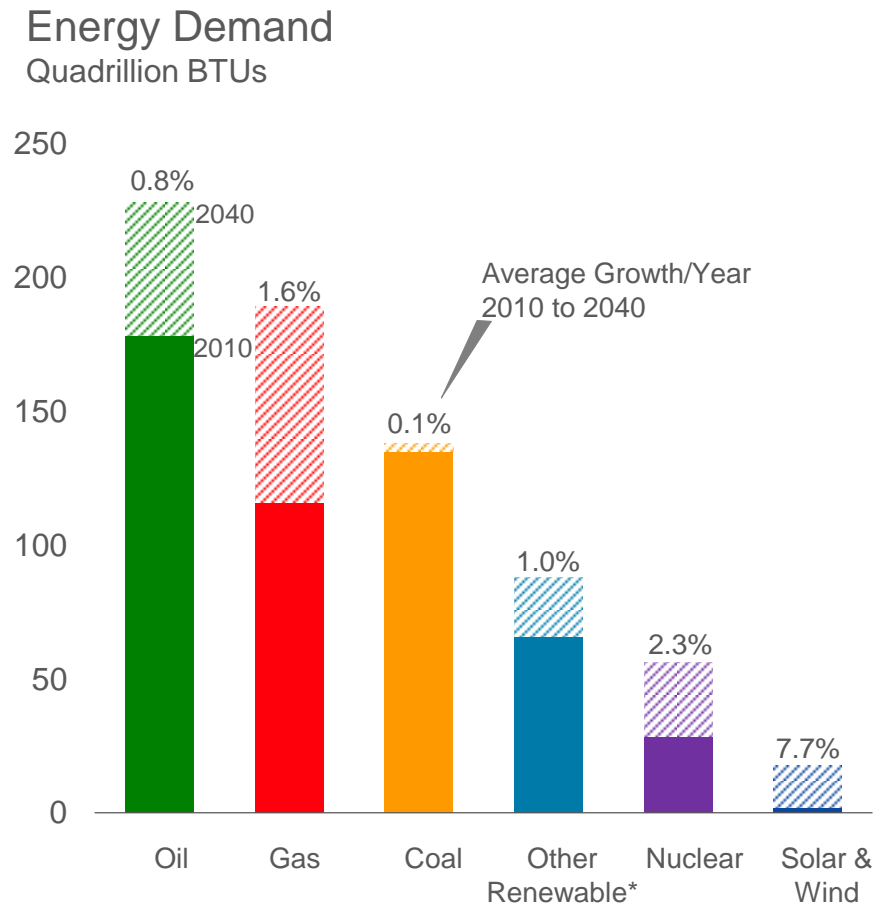
Growth led by developing economies



Source: ExxonMobil 2015 *Outlook for Energy*.

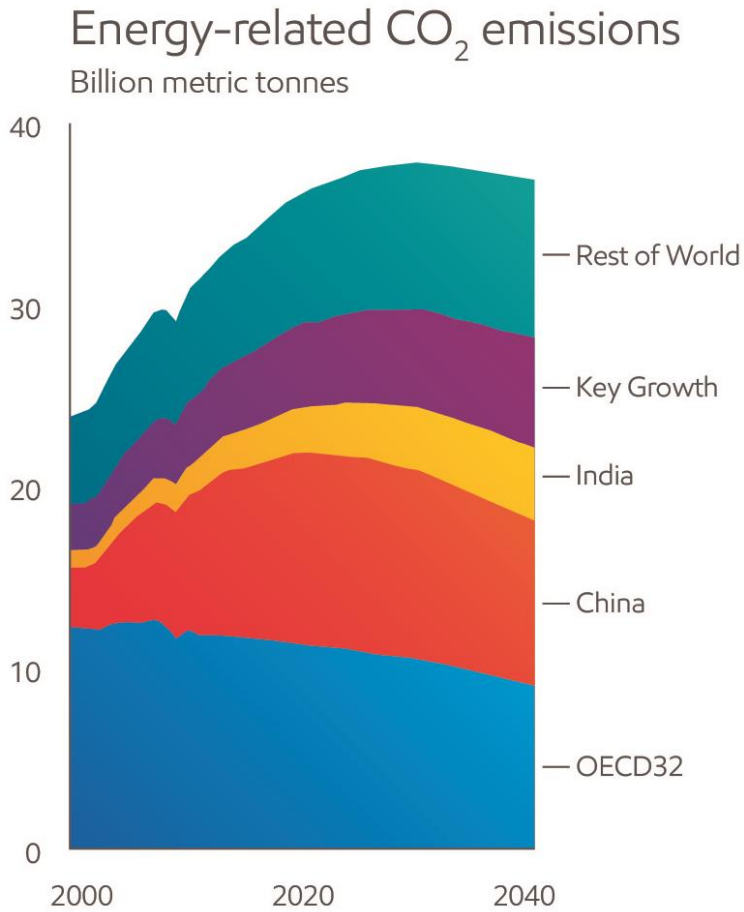
- Non-OECD nations drive growth in GDP and energy demand
- Middle class expanding by ~3 billion people
- Energy use per person in non-OECD remains well below OECD
- Efficiency gains keep OECD demand flat
- Without efficiency gains, global demand growth would be four times larger

Oil and natural gas expected to meet about 60% of global energy demand in 2040



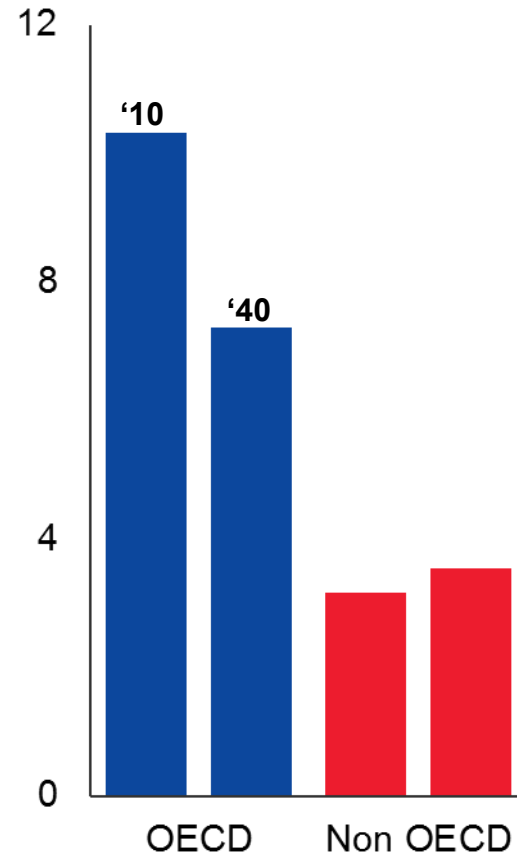
- Oil and natural gas lead growth as energy mix evolves
- Higher oil demand driven by expanding needs for transportation and chemicals
- Strong growth in natural gas led by power generation and industrial demand
- Demand trends reflect reasonable cost of carbon assumptions

Global emissions



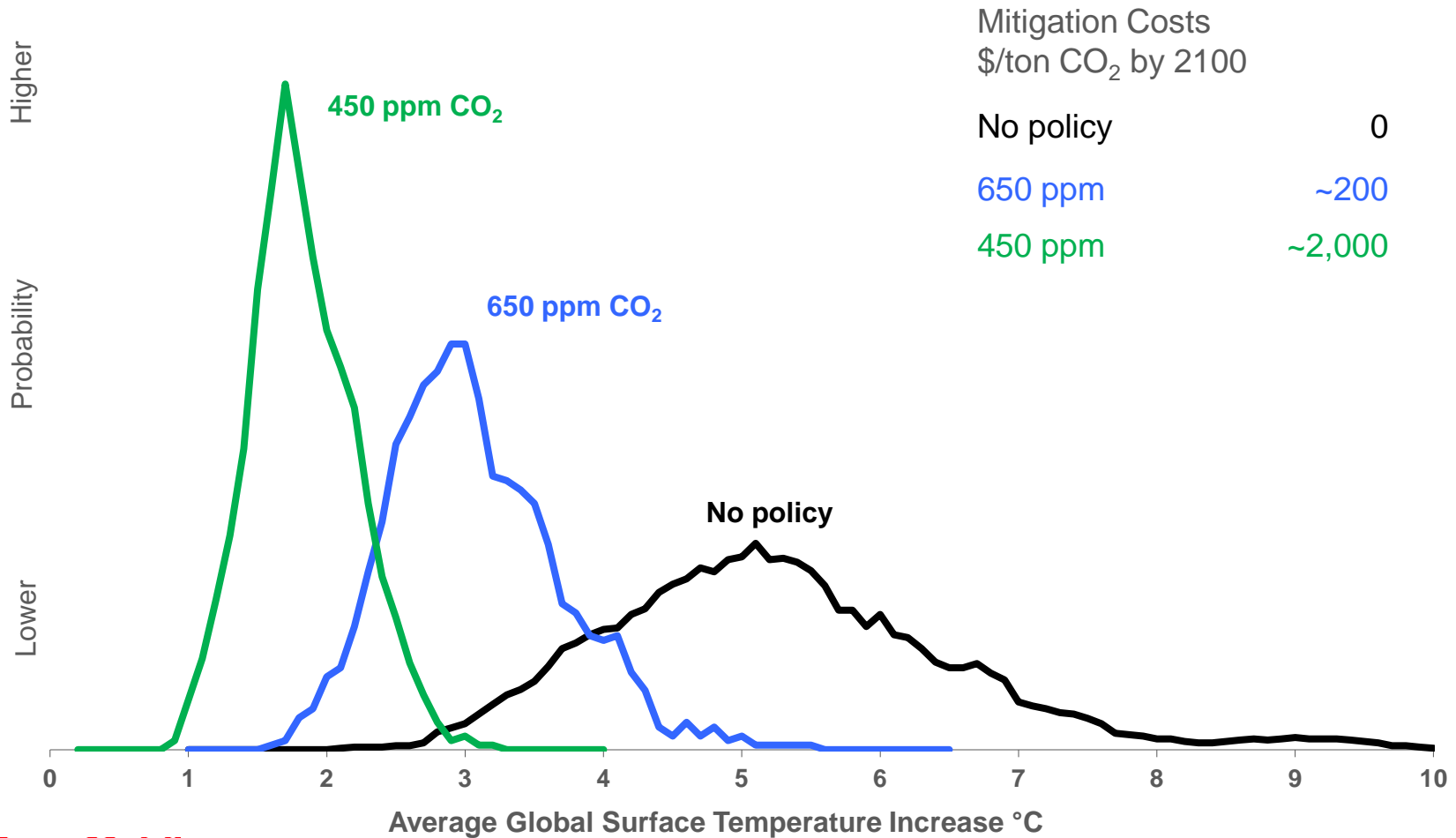
Emissions per Capita

Tonnes / Person



Reducing the probability of worst outcomes

Probability distribution of temperature increase (2000 to 2100)

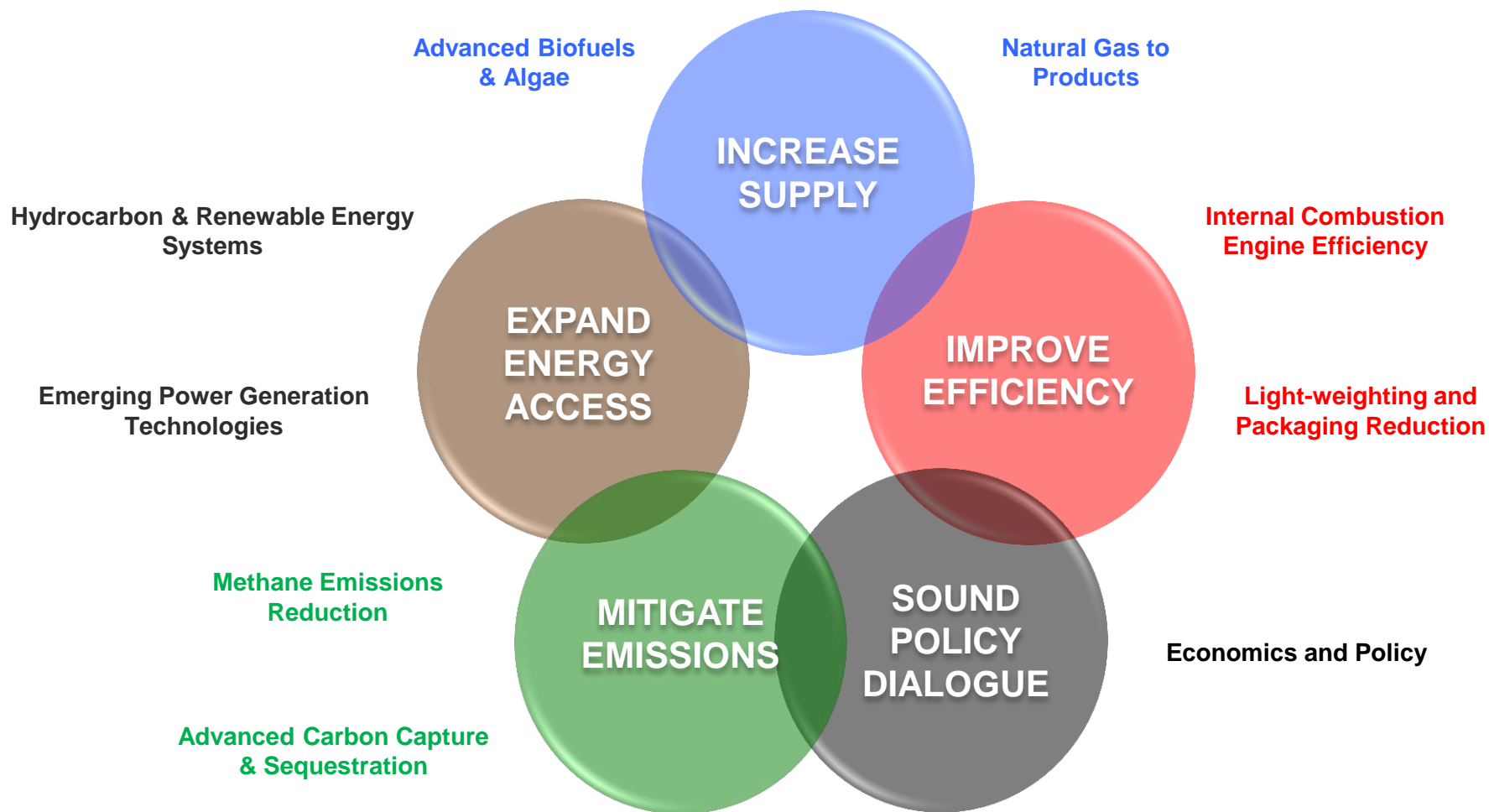


Unprecedented pace of technology deployment

Reducing GHGs 50% below 2005 by 2050 requires all steps below:

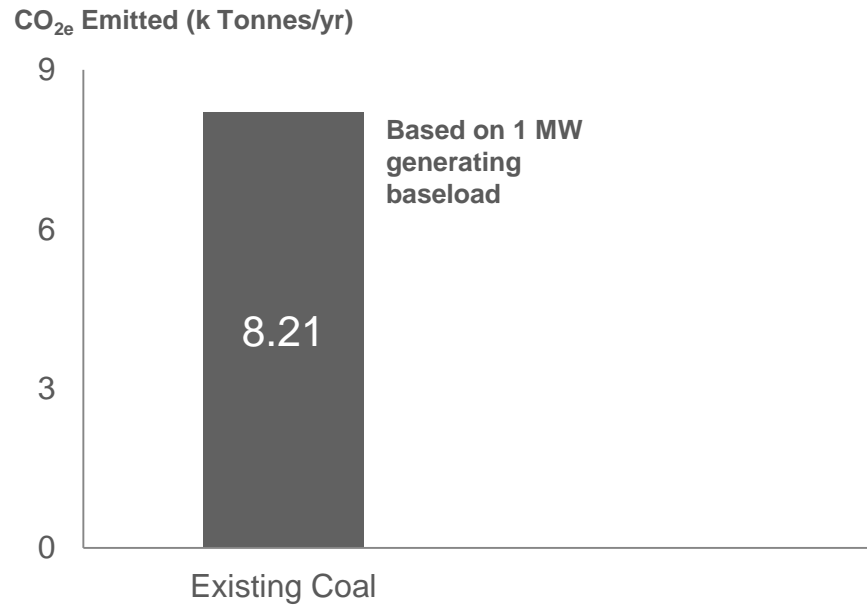
Investment	Required Annual Additions, #	Annual Additions Since 2005
Nuclear plants, 1,000 MW	30	< 1
Coal and gas plants with CCS, 500 MW	55	<< 1
Wind turbines, 4 MW	15,600	8,100
Solar PV, m ² panels	325 million	250 million

Long-range energy technology

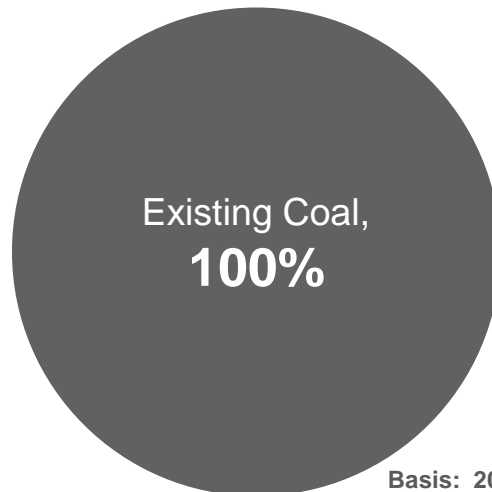


Backup

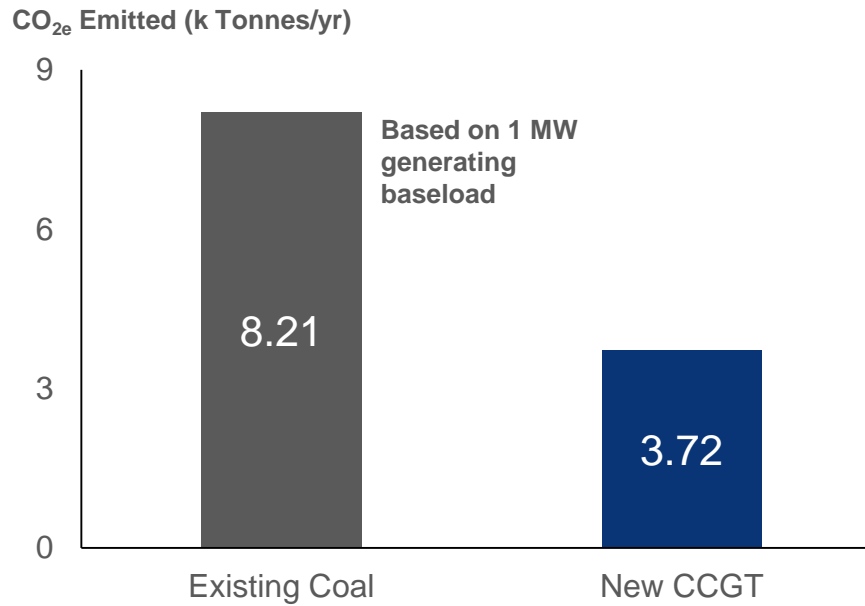
U.S. CO_{2e} emissions from coal plants



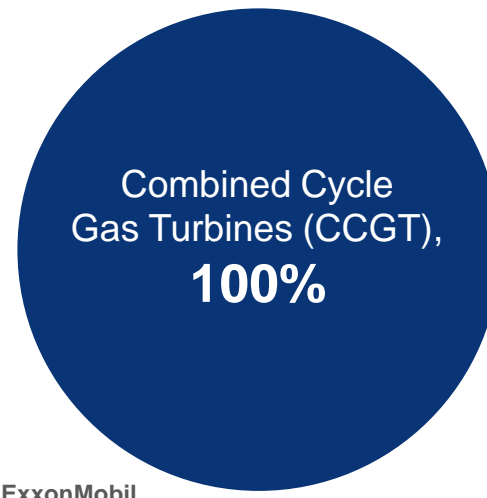
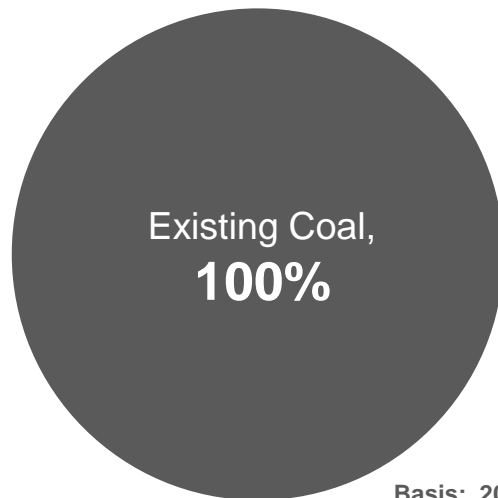
Relative Operating Time



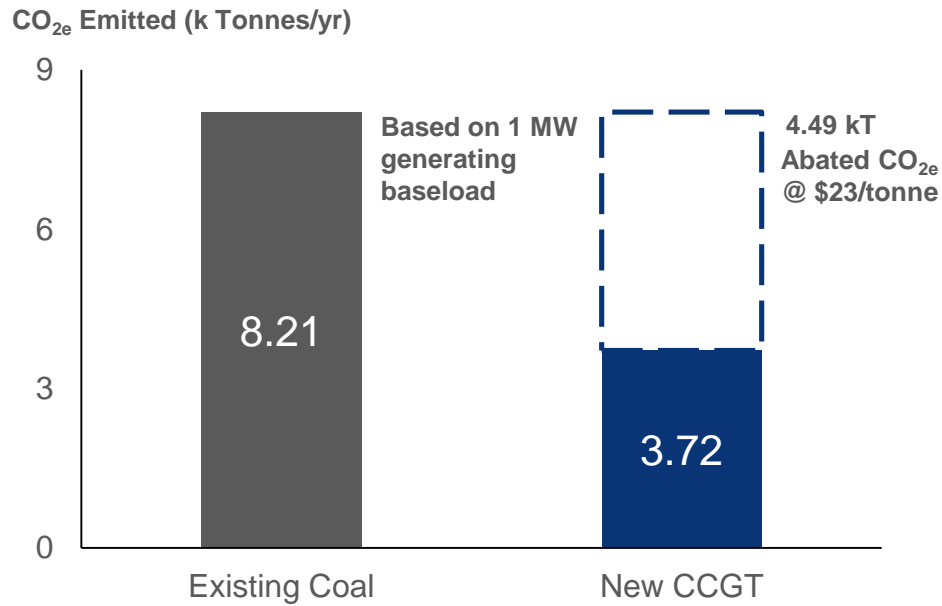
U.S. CO_{2e} abatement using natural gas



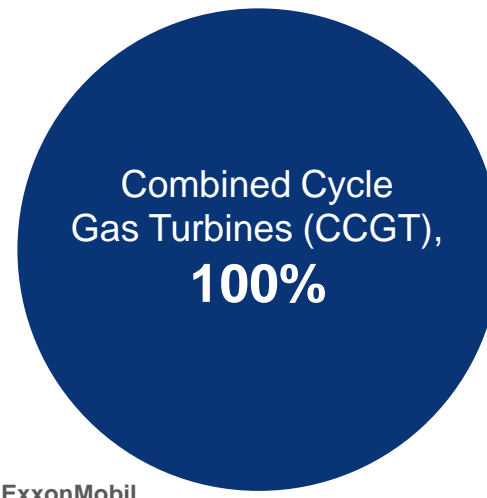
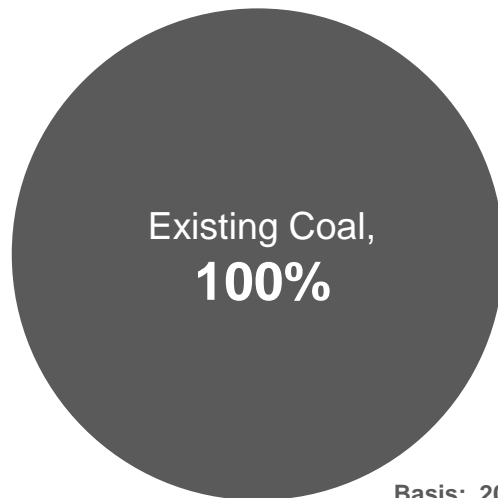
Relative Operating Time



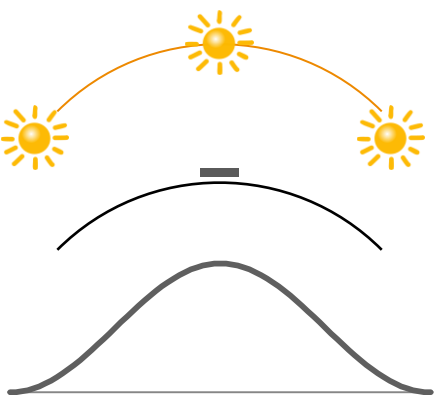
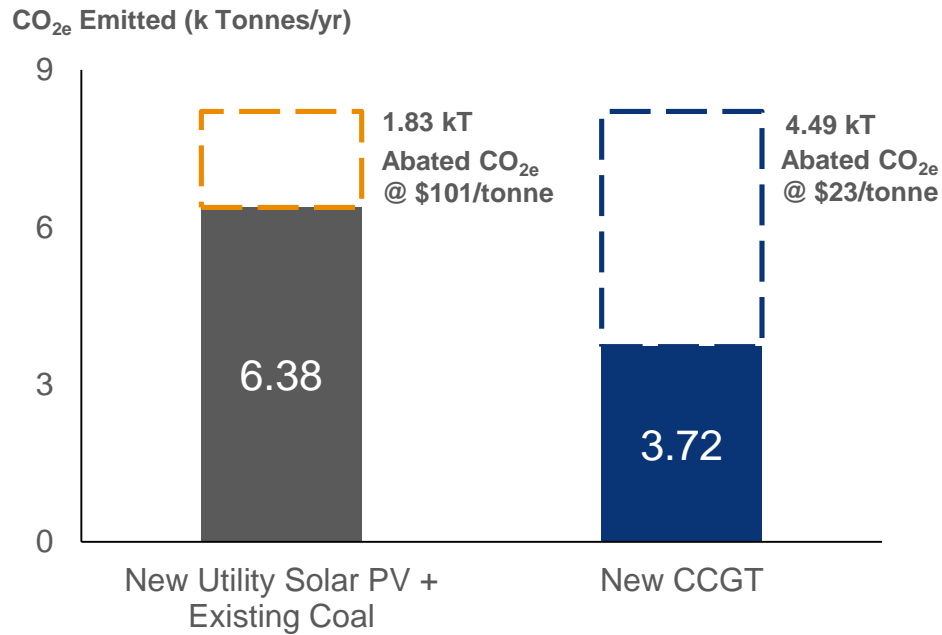
U.S. CO_{2e} abatement using natural gas



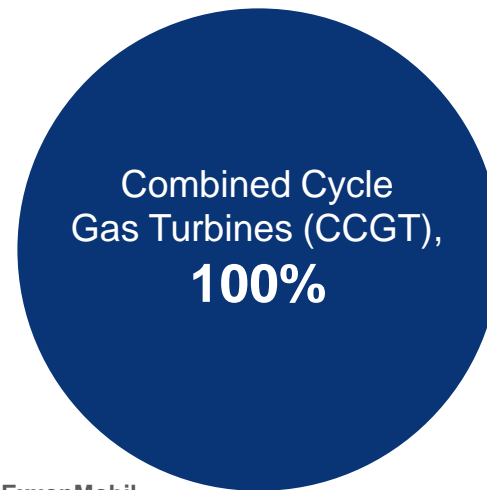
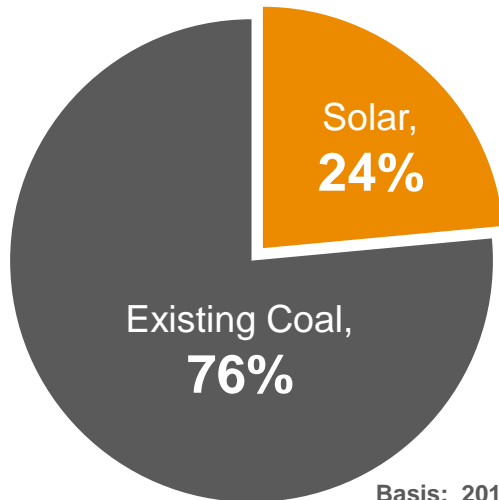
Relative Operating Time



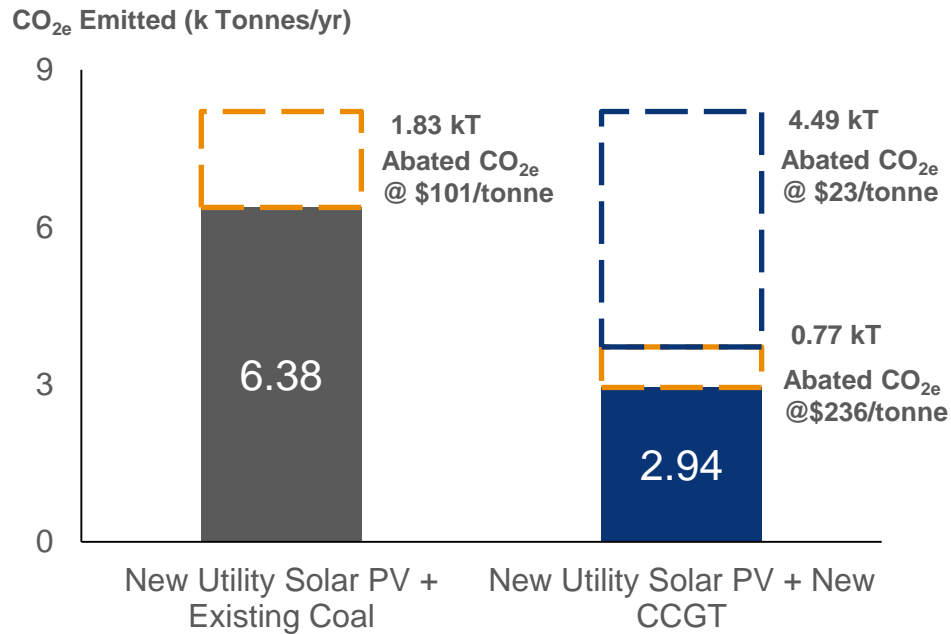
U.S. CO_{2e} abatement with utility solar



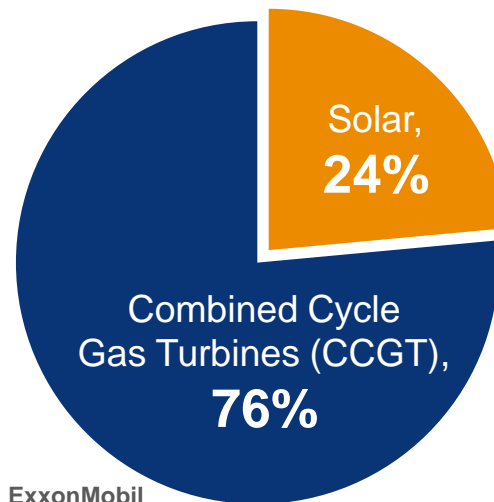
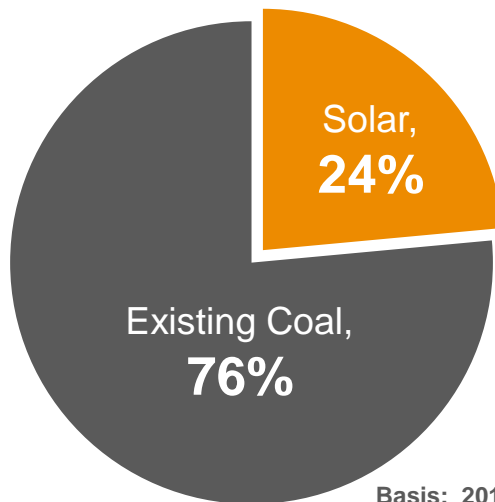
Relative Operating Time



U.S. CO_{2e} abatement solar with gas



Relative Operating Time



Basis: 2012 NETL; ExxonMobil