

# Natural Gas in a Low Carbon Future

## Environmental Opportunities & Challenges

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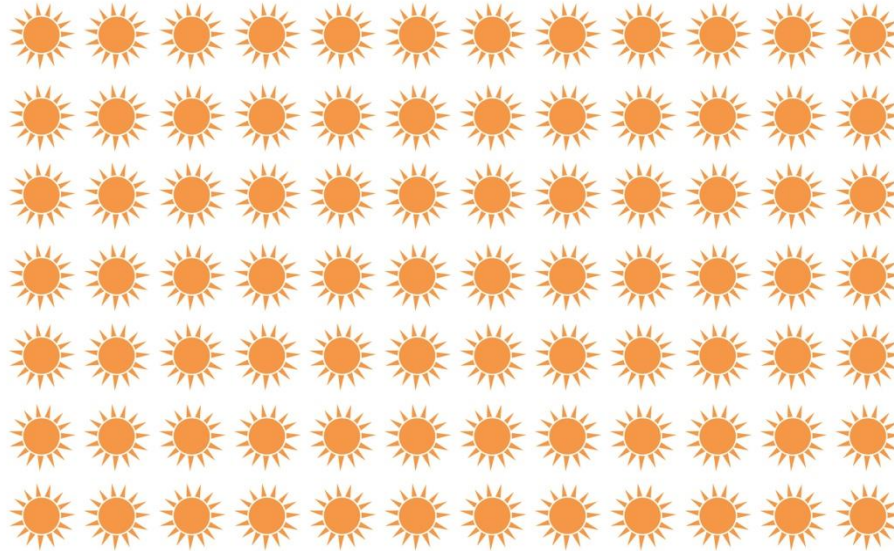
# CH<sub>4</sub> Traps More Heat Than CO<sub>2</sub>...

EACH METHANE MOLECULE TRAPS **84x** MORE HEAT

CO<sub>2</sub>



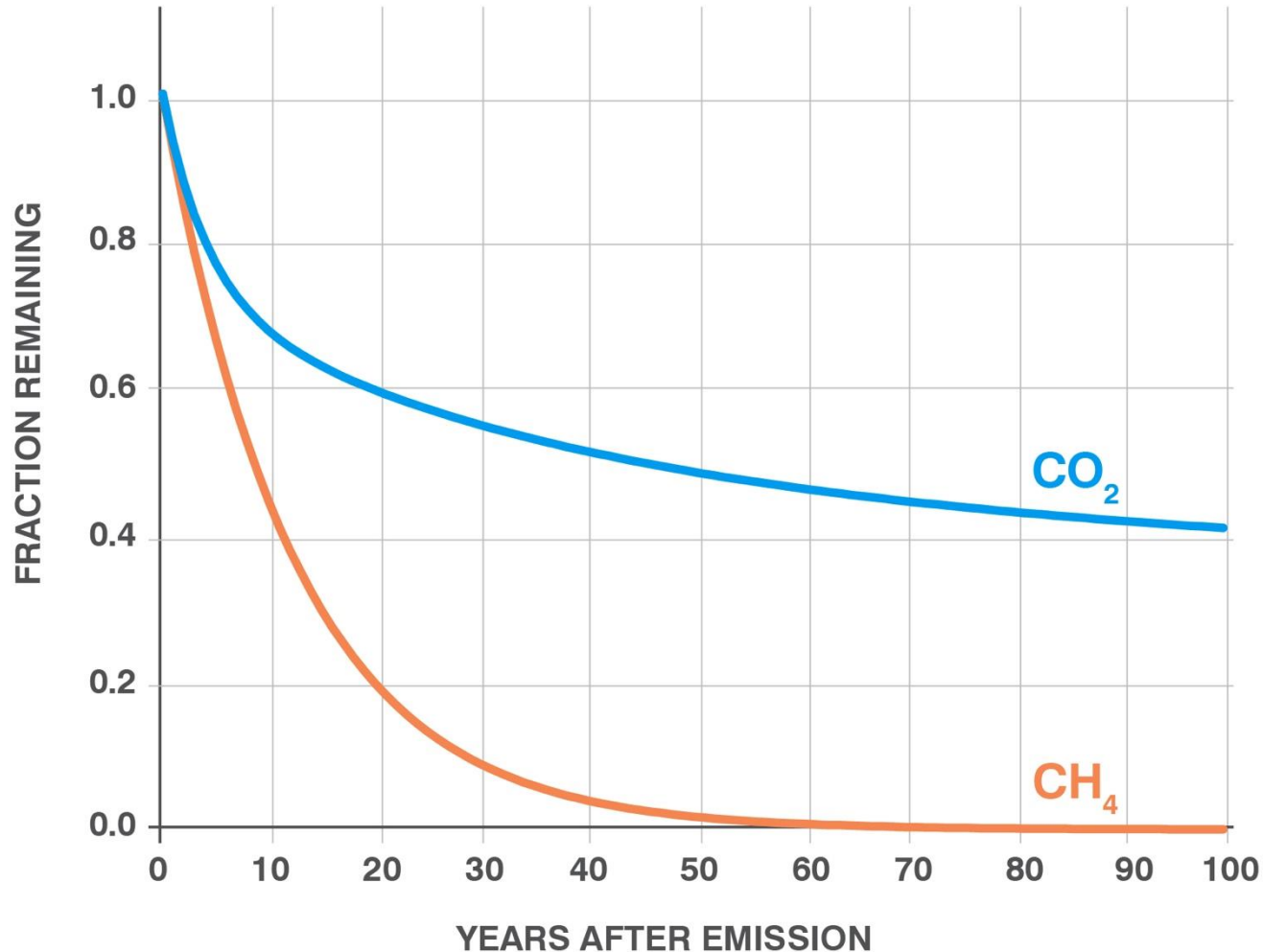
CH<sub>4</sub>



Ratio of direct radiative efficiencies, W m<sup>-2</sup> ppb<sup>-1</sup> (IPCC AR5)

# ...but breaks down faster than CO<sub>2</sub>

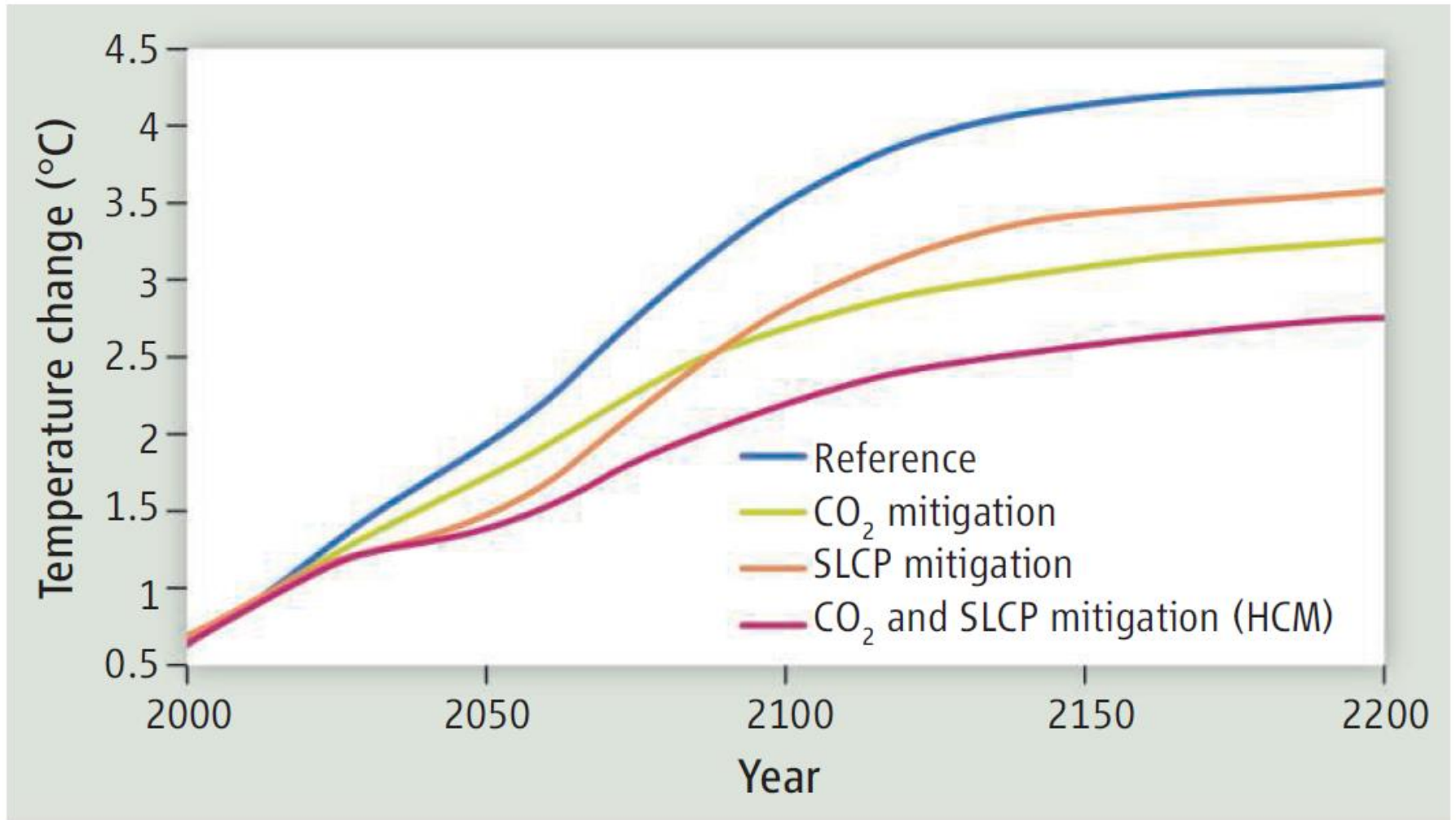
## METHANE DISSIPATES FASTER THAN CARBON DIOXIDE



- CH<sub>4</sub> produces tropospheric ozone and stratospheric water vapor as it decays

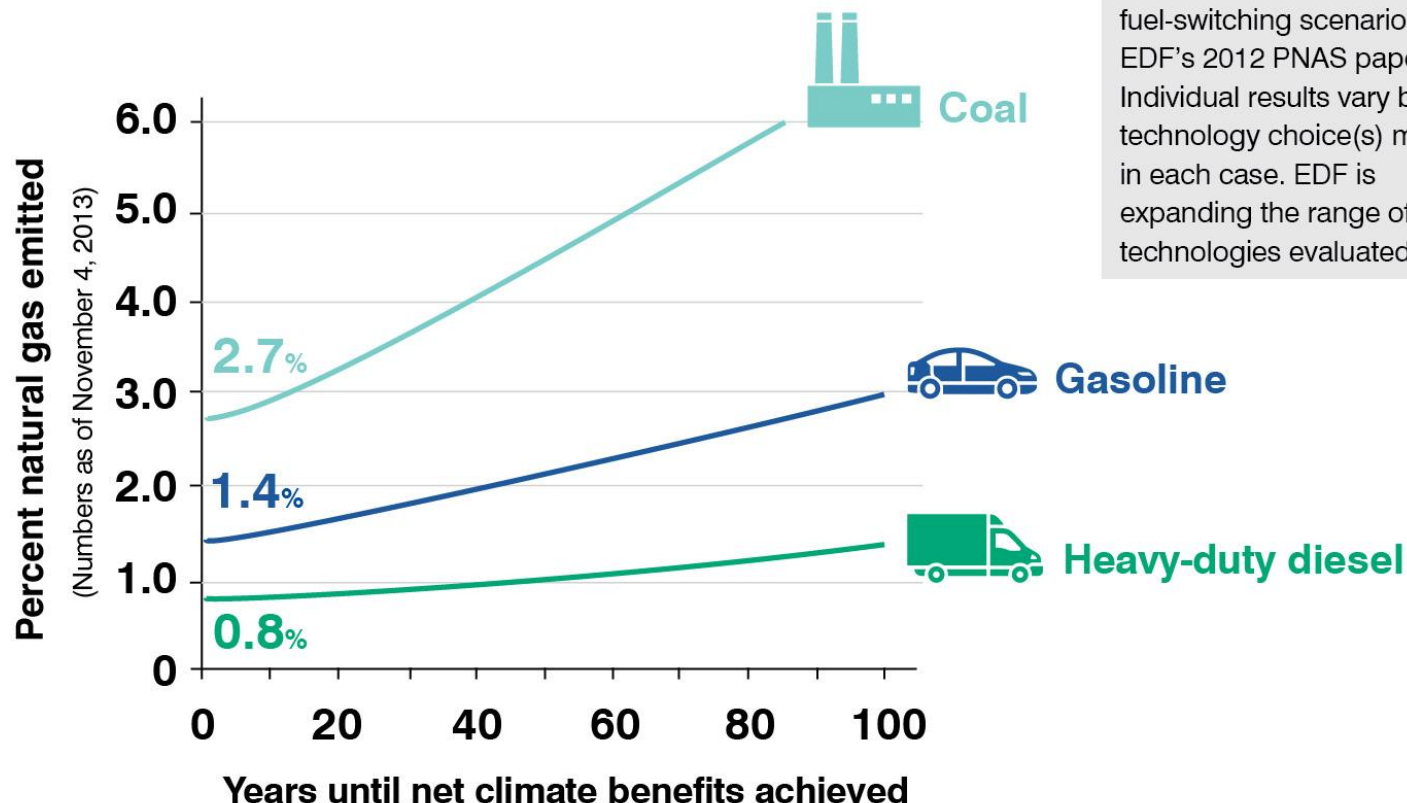
- Increases the direct warming effect by 65% (IPCC AR5)

# Methane and CO<sub>2</sub> reductions required



# Gas can be worse than alternatives

*Depending on emission rate and timeframe*

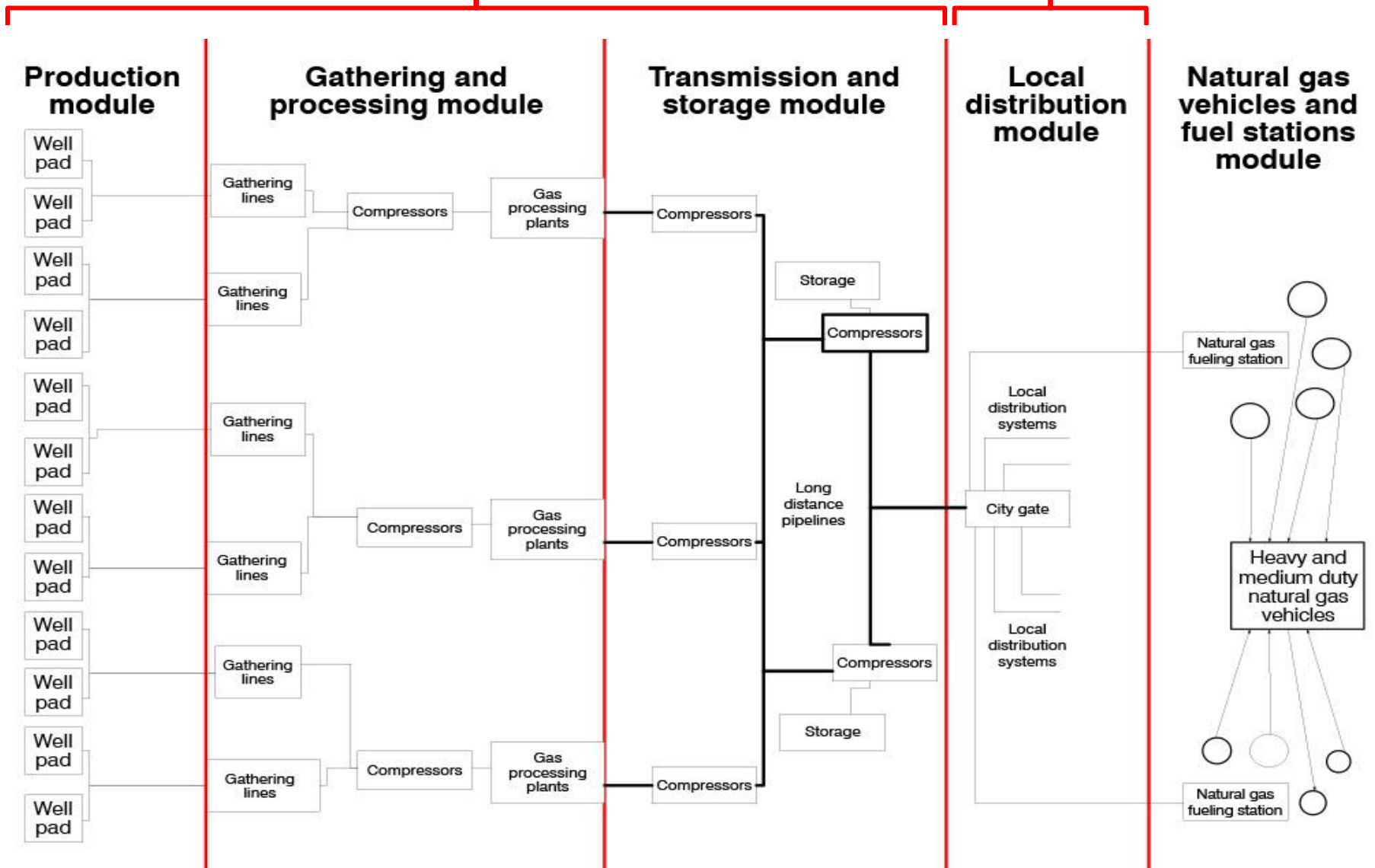


Updated calculations of fuel-switching scenarios in EDF's 2012 PNAS paper.\* Individual results vary by the technology choice(s) made in each case. EDF is expanding the range of technologies evaluated.

# Comprehensive emission study effort

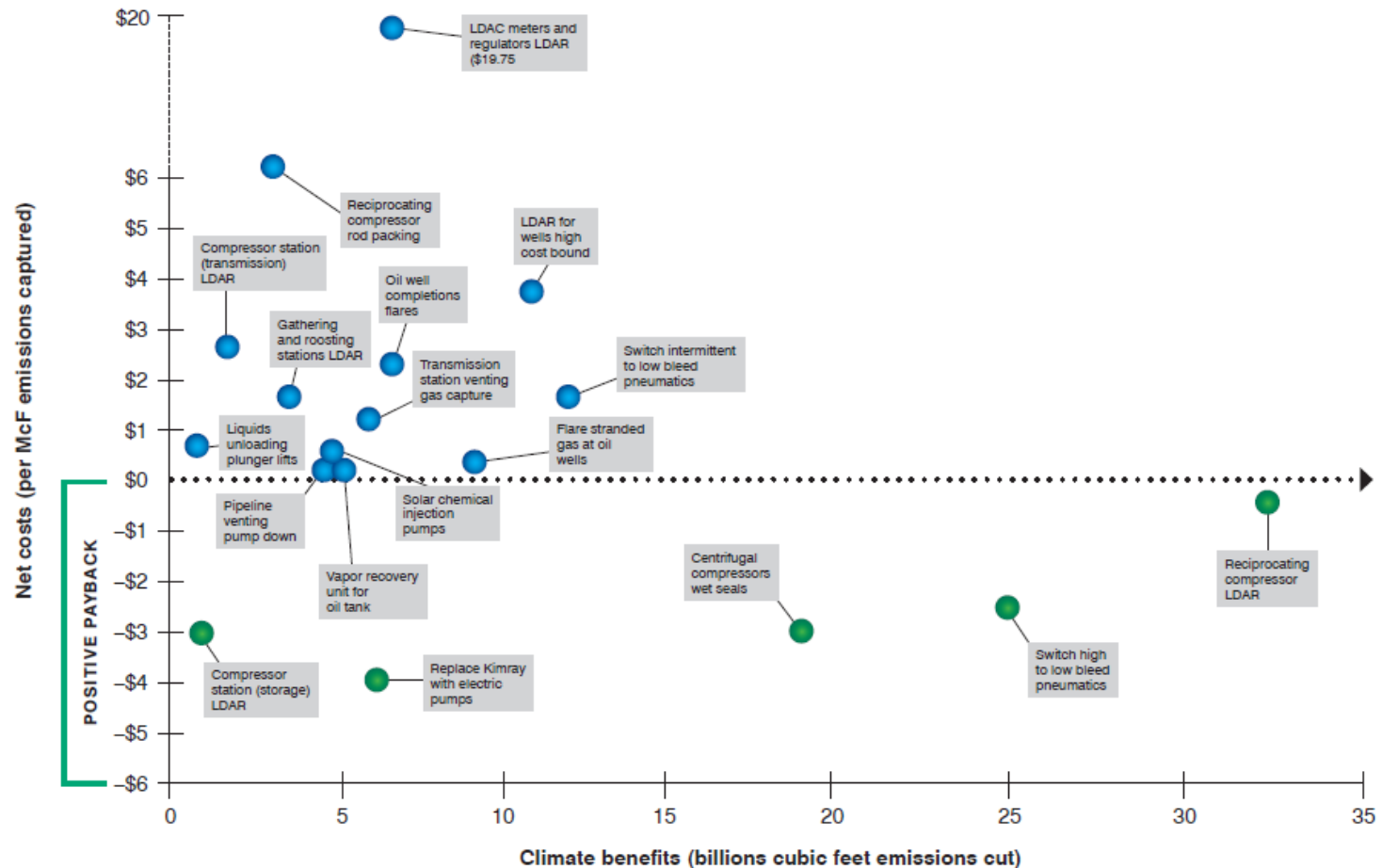
Over-flight/Coordinated Campaign Work

Tower/Drive-by/Mapping  
Work



# A range of cost effective reductions

<http://www.edf.org/icf-methane-cost-curve-report>





# EDF/Google Methane Mapping Project





# Data to stimulate and inform action

<http://www.edf.org/climate/methanemaps>



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### Climate and energy

- The problem
- Cleaner, smarter energy
- Stronger laws and policies
- Private-sector partnerships

EDF Climate Corps  
Work with labor unions

▾ Maps of natural gas leaks

- Why leaks are a problem
- How to fix the problem
- City snapshots
- How this data is different
- About the partnership

▸ Global initiatives

▸ Policy and resources

Our experts

Oceans

Ecosystems

Health

Policy resources

## Natural gas: Local leaks impact global climate

EDF and Google Earth Outreach use new approach to pinpoint climate pollution

Natural gas heats our homes and cooks our dinner. But when natural gas—mostly methane—leaks into the air, it's a big problem for the climate. So EDF and Google Earth Outreach teamed up to build a faster, cheaper way to find and assess leaks under our streets and sidewalks. We tested it as part of a pilot mapping program, and here's what we found.

### Boston: Older pipes, more leaks



Click for interactive map

### Indianapolis: Newer pipes, fewer leaks



Click for interactive map

### Staten Island, New York



### Bring the project to more places

Nominate your city to be mapped, which also