

By comparing United States Energy Information Administration CO2 projections with International Energy Agency data on the pathway to 6C warming and finally US Climate goals we created the following combined chart:



PART 1: THE FEIS ENERGY SCENARIOS.

LINK: <http://keystonepipeline-xl.state.gov/finalseis/index.htm>

To determine the climate impact of the Keystone XL pipeline the State Department's FSEIS evaluated three EIA AEO 2013 scenarios for future oil demand and pricing. They also modified the Reference Case slightly to change where supply comes from to favour higher Latin America slightly.

FSEIS section 1.4.4.2 Scenarios says:

The supply-demand cases modeled are as follows:

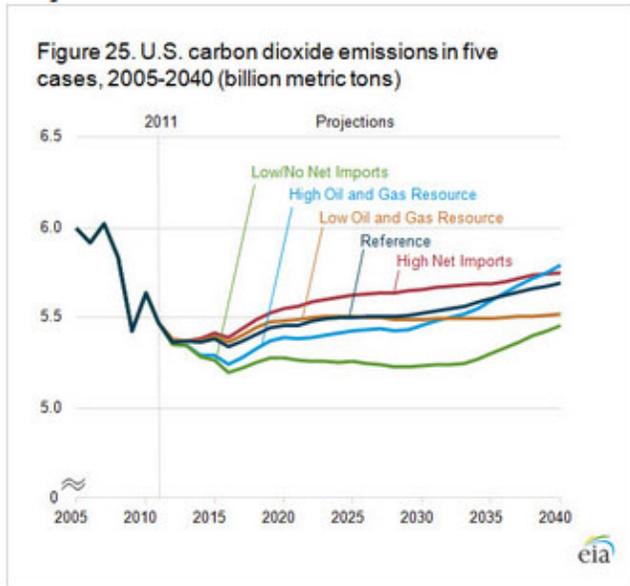
- The [EIA AEO] **Reference Case**...
- The EIA AEO **High Oil and Gas Resource Case**...
- The EIA AEO **Low/No Net Imports Case**...
- A supply-demand case which assumes higher than expected oil production in Latin America.

*The **High Latin America** case ... is a supply-side modification of the Reference Case, and the benchmark WTI price is assumed to be the same ... This is not a forecast or projection, but rather a set of assumptions*

The FSEIS briefly discussed another EIA AEO 2013 scenario called the "Low Oil Price Case." We did not include this in our chart because it was not a scenario that was modelled by the FSEIS. Also, as discussed below, this scenario results in CO2 emissions matching the Reference case.

PART 2: CO2 EMISSIONS FROM FEIS ENERGY SCENARIOS

Projected carbon dioxide emissions



The above chart from the EIA shows the CO₂ projections for the three energy scenarios used in the KXL FSEIS ("Reference", "High Oil and Gas Resource" and "Low/No Net Imports".) As you can see, CO₂ emissions are higher in 2040 than today in all three scenarios. The chart, the data ([excel link below chart](#)) and a discussion can be found here: http://www.eia.gov/forecasts/archive/aeo13/topic_emissions_all.cfm#carbondioxide_emission

In addition, the EIA provides a table browser that lets you get the CO₂ emissions projections from all of their energy scenarios. This can be found here: <http://www.eia.gov/oiaf/aeo/tablebrowser> . I used this browser to get data for "Low Oil Price Case." The Low Oil Price CO₂ emissions are nearly identical to the Reference case emissions.

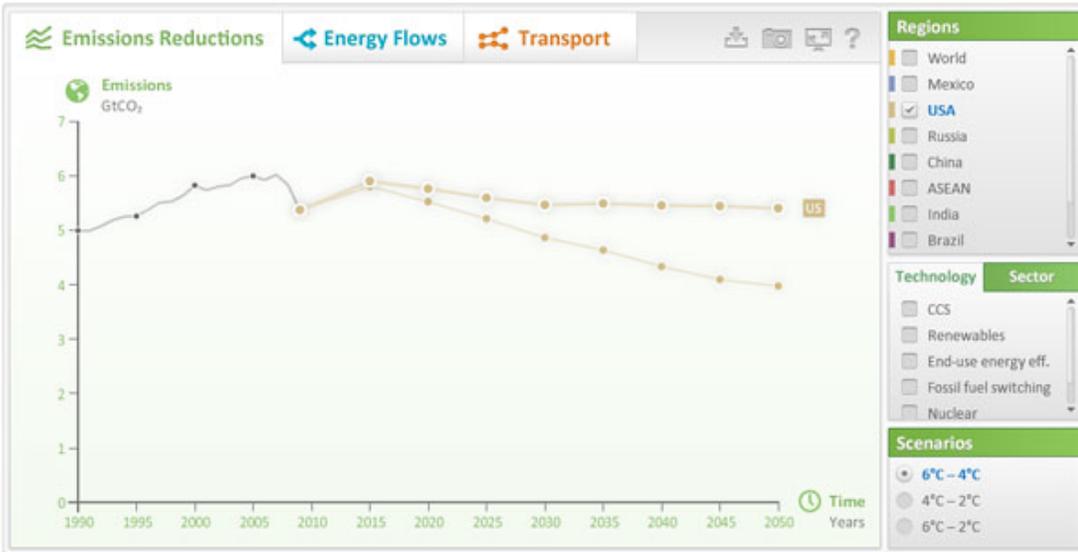
PART 3: IEA CLIMATE SCENARIOS

LINK: <http://www.iea.org/etp/explore/>

The IEA's Energy Technology Perspectives 2012 is their "flagship publication on energy technologies." They evaluate three energy and climate emissions scenarios.

- **Their 6°C Scenario (6DS) "is largely an extension of current trends."**
- Their 4°C Scenario (4DS) is "an ambitious scenario that requires significant changes in policy and technologies. Moreover, capping the temperature increase at 4°C requires significant additional cuts in emissions in the period after 2050."
- **Their 2°C Scenario (2DS) "describes an energy system consistent with an emissions trajectory that recent climate science research indicates would give an 80% chance of limiting average global temperature increase to 2°C. It sets the target of cutting energy-related CO₂ emissions by more than half in 2050 and ensuring that they continue to fall thereafter.**

The IEA provides a [data visualization tool](#) anyone can use to see the CO₂ pathways they calculate will lead to the different levels of warming. For our chart we used the "Emissions Reductions" tab and selected the USA region. Below is a screen shot of this chart:



Note that the 6C pathway has USA CO2 emissions in 2005 at 6 GtCO2. This matches the EIA data and chart above. The 6C pathway has USA CO2 emissions in 2040 at 5.5 GtCO2. This is similar to the "Low/No Net Imports" EIA energy scenario and well below the "Reference" and "High Oil and Gas Resource" scenarios. So all three FEIS scenarios are consistent with IEA's 6C scenario.

Note also that the IEA 4C scenario has USA CO2 emissions at 4.3 GtCO2 in 2040. This is far, far below any of the FEIS scenarios used. And the IEA 2C scenario has USA CO2 emissions at 2 GtCO2 in 2040.

PART 4: USA CLIMATE GOALS

USA has two stated climate goals:

- 1) COPENHAGEN ACCORD. President Obama pledged that the USA would cut annual CO2 emissions by 17% below 2005 levels by 2020. USA CO2 emissions were 6 GtCO2 in 2005. A 17% cut would require CO2 emissions to be just below 5 GtCO2 by 2020.
- 2) LIMIT GLOBAL WARMING TO 2C. As noted above, the IEA says global emissions must be cut by at least 50% by 2050 to stay below 2C. A 50% cut in USA CO2 emissions would be 3 GtCO2 by 2050.

CHART & ANALYSIS: *Barry Saxifrage, [Visualcarbon.org](http://www.visualcarbon.org)*

Oil Change International February 2014

<http://www.priceofoil.org>