

Changes to the Reference Case
compared to the draft modeling results presented at the July 10 ICCAG meeting.
24 August 2007

ICF presented a set of draft modeling results to the Illinois Climate Change Advisory Group (ICCAG) on July 10th. Based on that presentation, stakeholders provided a number of comments regarding the Reference Case. ICF and SSI have continued to refine the modeling results based on that feedback and additional comments from WRI and state of Illinois staff. Below is a summary of some key changes that have been made to the Reference Case since the July 10th presentation. Other changes have been made as well that will be discussed at the ICCAG meeting on Sept. 6.

Power Sector:

The changes made to the power sector affected generation only. Electricity sales and the underlying demand within the state are unchanged.

Compared to the July 10 draft reference case results, several changes were made affecting generation:

- The assumed coal retirements increased from 1,460 Mw to 1,820 Mw.
- Emission factors in the Region were erroneously higher than in Illinois resulting in less coal generation in Illinois. This has been corrected, resulting in increased coal generation in Illinois and reduced oil/gas generation as well as some shift between Region & Illinois.
- The overall level of generation in the state in 2005 was reviewed and adjusted against U.S. Energy Information Administration reports. This change essentially lowered the level of generation at the start of the modeling period; with growth over the period unchanged from the earlier Reference Case. By 2020, generation in the state is now 14,000 GWh lower than was shown in the July 10 presentation.
- In the new Reference Case, the share of total power generation in 2020 has changed: Coal 2.3% points higher, Gas/Oil generation 5% points lower, wind 0.4% points lower and nuclear 3% points higher compared to the 10July07 presentation.
- The overall impact of these changes on GHG emissions is to reduce power sector emissions by 9.7 Mt compared to the 10July07 results.
- Coal generation now decreases between 2015 and 2020, whereas in the July 10 presentation it stayed flat. This is in large part because the projected coal retirements were previously assumed to happen before 2015, and in the updated reference case some have been moved to the 2015-2020 timeframe.

Transportation:

- Based on feedback from the July 10 ICCAG meeting, ICF reviewed transportation demand against US EIA historic data and forecasts. As a result of this review, projected growth in passenger demand was lowered and freight demand was increased relative to the July 10 Reference Case. The relative growth in demand for diesel was also adjusted.
- Vehicle Efficiency is unchanged from 10July07 presentation.
- The overall impact of these changes was to decrease GHG emissions from passenger transportation by 16.9 Mt, while increasing emissions from freight transportation by 5.6Mt. In total, transportation emissions decreased by 11.3Mt.

Other Sectors

- Agriculture/Forestry emissions increased by 6Mt from 10July07 presentation (due to conversion error in Reference Case only).
- Residential emissions in 2020 increased by 2 Mt relative to the 10July07 values while the industrial sector increased by 0.7Mt.

Overall Emissions Impact:

- At the time of the July 10th presentation, total emissions were 326Mt. This implied a gap to the emission target of 237Mt of 89 Mt CO₂e.
- The adjusted Reference Case based now shows 2020 emissions as 312 Mt.
- The most recent GHG Inventory from WRI has restated 1990 emissions as 231 Mt thereby changing the target level for 2020.
- The new “Gap” based on the updated Reference Case and revised target is now 81 Mt (312 minus 231).
- The relative contributions to total emissions have also changed as a result of the modifications made to the model. Compared to the results presented on July 10th, the power sector’s contribution to overall emissions in 2020 is now 3% points lower, passenger transportation’s share is 4% points lower, the residential and industrial sectors are each 1% points higher, and the freight sector’s contribution is 2% point higher.