



UJAE *Unions for Jobs And the Environment*

Address: PO Box 56173, Washington, DC 20040-6173 Voice and Fax: 301-585-5828 Email: ujae@rcn.com Website: www.ujae.org

Newsletter

September 2009

Member Unions

Brotherhood of Locomotive
Engineers

International Brotherhood
of Boilermakers,
Iron Ship Builders,
Blacksmiths, Forgers
and Helpers

International Brotherhood
of Electrical Workers

International Brotherhood
of Teamsters

Marine Engineers Beneficial
Association

Sheet Metal Workers
International Association

Transportation • Communications
International Union

International Association
Of Plumbers and Pipe Fitters

United Food and Commercial
Workers International Union

United Mine Workers
of America

United Transportation Union

Utility Workers Union
of America

President

Bill Cunningham

EIA's Analysis of HR 2454

Gene Trisko

The Energy Information Administration (EIA) of the U.S. Department of Energy released an economic analysis of the American Clean Energy and Security Act (HR 2454, ACESA) on August 5, 2009. The new EIA study uses the National Energy Modeling System to estimate the energy market, GDP and other economic impacts of the bill. Due to limitations in the model, impacts were estimated only to the year 2030, when the national greenhouse gas emission cap declines to 42% below year 2005 levels.

In reviewing this new analysis, it is important to understand what EIA did – and did not – include in its modeling assessment. The principal provisions of HR 2454 that EIA modeled included:

- The greenhouse gas cap-and-trade program, including free allocations of allowances to electric and gas distribution utilities, state energy efficiency programs, low-income consumer energy assistance, and provisions related to energy-intensive industries;
- The 20% combined efficiency and renewable electricity standard for electric providers;
- The carbon capture and storage early deployment and demonstration program initially proposed in 2008 by Rep. Rick Boucher (HR 6258);
- New federal building codes for commercial and residential structures;
- New federal lighting and energy efficiency standards;
- Technology improvements driven by funding provisions in the bill; and
- The “Smart Grid” savings program.

EIA did not take into account several important provisions of the bill, including: the strategic allowance reserve for limiting allowance price volatility; the separate cap-and-trade program for emissions of halofluorocarbons (refrigerants, etc.); the distributions of allowances to merchant generators; performance standards for sources not subject to the cap-and-trade program; and a new Clean Energy Development Administration (CEDA) to support investments in new energy technologies. Of these, EIA indicates that the CEDA program may have the largest potential “to alter the reported results.”

Two Major Uncertainties: Offsets and Availability of CCS Technologies

EIA points out the substantial influence on its results of assumptions regarding the availability of offsets, particularly from international sources, and technological progress in making coal-based CCS and other low- and zero-carbon technologies widely available:

While the (2 billion ton/year) ceiling on offset use is clear, their actual use is an open question. Beyond the usual uncertainties related to the technical, economic, and market supply of offsets, the future use of offsets for ACESA compliance also depends both on regulatory decisions that are yet to be made by the EPA, on the timing and scope of negotiations on international agreements or arrangements between the United States and countries where offset opportunities may exist, and on emissions reduction commitments made by other countries. Also, limits on offset use in ACESA apply individually to each covered entity, so that offset “capacity” that goes unused by one or more covered entities cannot be used by other covered entities. For some major entities covered by the cap-and-trade program, decisions regarding the use of offsets could potentially be affected by regulation at the State level. Given the many technical factors and implementation decisions involved, it is hardly surprising that analysts’ estimates of international offset use span an extremely wide range. One recent analysis doubts that even 150 MMT of international offsets will be used by 2020, while another posits that 1 BMT of international offsets will be used almost immediately from the start of the program in 2012, followed by a quick rise towards an expanded 1.5-BMT ceiling shortly thereafter.

The other major area of uncertainty in assessing the energy system and economic impacts of ACESA involves the timing, cost, and public acceptance of low- and no-carbon technologies. For the period prior to 2030, the availability and cost of low- and no-carbon baseload electricity technologies, such as nuclear power and fossil (coal and natural gas) with CCS, which can potentially displace a large amount of conventional coal-fired generation, is a key issue. However, technology availability over an extended horizon is a two-sided issue. Research and development breakthroughs over the next two decades could expand the set of reasonably priced and scalable low- and no-carbon energy technologies across all energy uses, including transportation, with opportunities for widespread deployment beyond 2030. The achievement of significant near-term progress towards such an outcome, however, could significantly reduce the size of the bank of allowances that covered entities and other market participants would want to carry forward to meet compliance requirements beyond 2030.

Six Cases Analyzed

EIA developed multiple scenarios for estimating the potential impacts of HR 2454:

The **Basic Case** represents an environment where key low-emissions technologies, including nuclear, fossil with CCS, and various renewables, are developed and deployed on a large scale in a timeframe consistent with the emissions reduction requirements of ACESA without encountering any major obstacles. It also assumes that the use of offsets, both domestic and international, is not severely constrained by cost, regulation, or the pace of negotiations with key countries covering key sectors.

The **Zero Bank Case** is similar to the Basic Case except that no banked allowances are held in 2030, reflecting the assumed availability of a broad array of reasonably priced low- and no-carbon technologies that can provide an alternative path to compliance with tighter emissions caps after 2030 through reductions across all energy uses, including transportation.

The **High Offsets Case** is similar to the Basic Case except that it assumes the near-immediate use of international offsets at levels at or close to the specified aggregate ceiling, without regard to possible institutional or market impediments.

The **High Cost Case** is similar to the Basic Case except that the costs of nuclear, coal with CCS, and dedicated biomass generating technologies are assumed to be 50 percent higher.

The **No International Case** is similar to the Basic Case, but represents an environment where the use of international offsets is severely limited by cost, regulation, and/or slow progress in reaching international agreements or arrangements covering offsets in key countries and sectors.

The **No International/Limited Case** combines the treatment of offsets in the ACESA No International Case with an assumption that deployment of key technologies, including nuclear, fossil with CCS, and dedicated biomass, cannot expand beyond their Reference Case levels through 2030.

Summary of Results

The chart and table below summarize EIA’s findings on the energy market, overall economic (GDP), and industrial shipment impacts of HR 2454:

Figure ES-2. Primary Energy Consumption by Fuel in Main ACESA Cases, 2030
(quadrillion Btu)

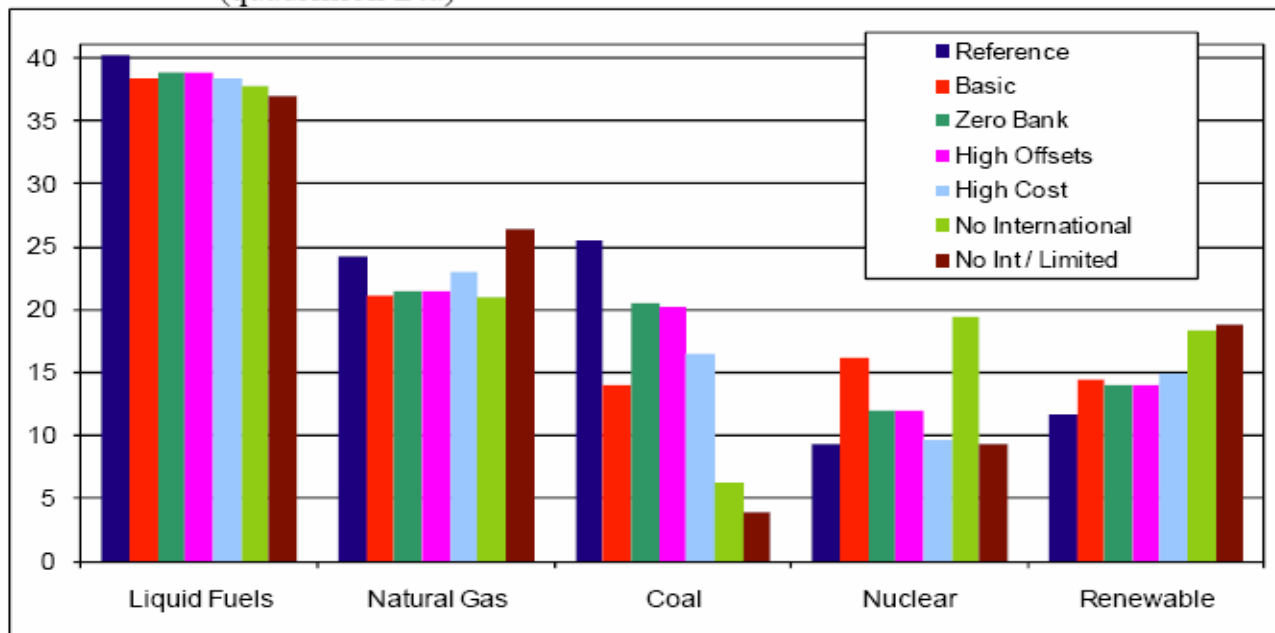


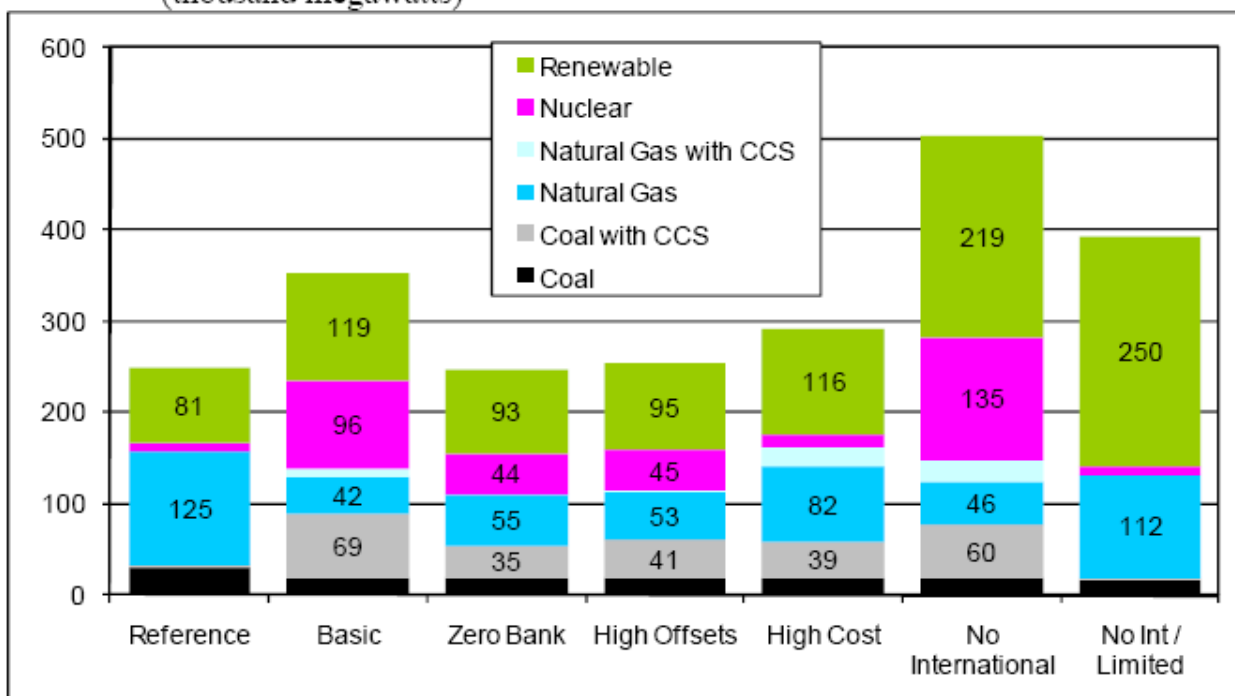
Table ES-2. Macroeconomic Impacts of ACESA Cases Relative to the Reference Case
(billion 2000 dollars, except where noted)

	Basic	Zero Bank	High Offsets	High Cost	No International	No Int / Limited
Cumulative Real Impacts 2012-2030 (present value using 4-percent discount rate)						
GDP						
Change	-566	-432	-523	-781	-717	-1897
Percent Change	-0.3%	-0.2%	-0.2%	-0.4%	-0.3%	-0.9%
Consumption						
Change	-273	-196	-252	-384	-323	-988
Percent Change	-0.2%	-0.1%	-0.2%	-0.3%	-0.2%	-0.7%
Industrial Shipments (excludes services)						
Change	-910	-753	-480	-958	-1720	-2877
Percent Change	-1.0%	-0.8%	-0.5%	-1.1%	-1.9%	-3.2%
Nominal Revenue Collected 2012-2030^a	2971	1292	1332	2299	3462	6350
2020 Impacts (not discounted)						
GDP						
Change	-50	-19	-26	-70	-34	-112
Percent Change	-0.3%	-0.1%	-0.2%	-0.5%	-0.2%	-0.7%
Consumption						
Change	-21	-7	-11	-30	-15	-64
Percent Change	-0.2%	-0.1%	-0.1%	-0.3%	-0.1%	-0.6%
Industrial Shipments (excludes services)						
Change	-68	-54	-32	-69	-108	-186
Percent Change	-1.0%	-0.8%	-0.5%	-1.0%	-1.6%	-2.8%
Nominal Revenue Collected^a	71	44	46	79	118	215
2030 Impacts (not discounted)						
GDP						
Change	-161	-104	-120	-214	-226	-453
Percent Change	-0.8%	-0.5%	-0.6%	-1.1%	-1.1%	-2.3%
Consumption						
Change	-63	-36	-50	-97	-69	-180
Percent Change	-0.4%	-0.3%	-0.4%	-0.7%	-0.5%	-1.3%
Industrial Shipments (excludes services)						
Change	-183	-125	-87	-198	-338	-506
Percent Change	-2.5%	-1.7%	-1.2%	-2.7%	-4.6%	-6.8%
Nominal Revenue Collected^a	330	205	211	367	556	1030

The coal market impacts of HR 2454 are most severe in the two cases where offsets are limited (no international and no international/limited). In these cases, coal utilization drops from more than 25 Quadrillion BTUs in 2030 (approximately 1.25 billion tons) to levels of 4-6 Quads. Natural gas use rises substantially when no international offsets are available. Coal use in the Basic case is 47% below projected 2030 reference case levels. In the high offset case, however, coal use in 2030 is 11% below 2007 actual levels. Overall, the electricity sector accounts for 79% to 88% of energy-related CO2 emission reductions in 2030 across EIA's suite of cases. Between 6% and 85% of existing coal generating capacity is projected to retire by 2030 across the six cases.

EIA's Basic case projects that 69 Gigawatts of new coal capacity with CCS will be deployed by 2030, consistent with recent U.S. EPA (June 2009) estimates. EPA found that once HR 2454's bonus allowance pool for supporting 72 GW of CCS capacity is used up, no new coal plants are constructed. EIA's forecasts show that at lower levels of CCS deployment in its other cases, utilities turn mainly to natural gas, nuclear and renewables for incremental generation capacity:

Figure 11. Cumulative Capacity Additions in ACESA Main Cases, 2007-2030
(thousand megawatts)



Offset Availability Will Impact Traditional Industries

The critical role of international offsets is evident in EIA's Gross Domestic Product and industrial shipment findings. GDP is reduced 0.8% in 2030 in the Basic case (undiscounted), compared to 2.3% in the no international/limited offsets case. Similarly, industrial shipments in 2030 are 2.5% lower than the reference case in the Basic case, declining to -6.8% in the no international/limited offsets case. Industrial shipment impacts are a reasonable proxy for impacts on traditional manufacturing and energy-intensive industries.

For comparison, previous EIA analyses of proposed climate legislation indicate industrial shipment impacts in 2030 of -1.7% (Bingaman-Specter, 2007) to -2.9% (Lieberman-Warner, 2008), as summarized in the table below.

**Impacts of HR 2454, S. 2191 (Lieberman-Warner) and S. 1766 (Bingaman-Specter)
on Industrial Shipments, 2020 and 2030
(In billions of 2000 dollars and pct. change from reference case)**

	2020 Basic Case	2030 Basic Case
HR 2454	-\$68 -1.0%	-\$183 -2.5%
S.2191	-\$100 -1.4%	-\$233 -2.9%
S.1766	-\$55 -0.8%	-\$139 -1.7%

Source: EIA Analyses of S. 2191 and S. 1766 (2008), and HR 2454 (2009).

Observations

HR 2454 contains the most generous offset provisions of any national climate change bill developed to date, and the availability of these offsets will be critical to moderating its impacts on the energy sector, traditional industries, and consumers. For example, industrial shipments in 2030 decline by 1.2% in EIA’s high offset case, less than one-half the 2.5% decrease in the Basic case. The projected coal market impacts of HR 2454, while substantial in the Basic case, are likewise reduced significantly in the high offsets scenario to 11% below 2007 actual levels by 2030.

The ultimate availability of large supplies of international offsets remains in question. In August, negotiators at the Bonn climate meetings failed to agree on whether international forest preservation should generate marketable offsets. Brazil is leading the opposition to this program, which has broad support from environmental groups, the U.S., Japan, Canada, Australia and the European Union. The outcome of the offsets debate will influence the likelihood of a new global climate agreement at Copenhagen in December. Given this uncertainty, U.S. climate legislation should provide a basis for access to international offsets that can operate within, or independent of, the framework of any Copenhagen agreement on international offsets.

As the Senate considers revisions to HR 2454, ensuring the timely availability of domestic and international offsets should top the agenda of potential improvements to the bill, followed by enhanced support for CCS deployments at new and existing generating facilities. Based on EIA’s analysis, both of these measures appear essential to reduce the risks of a compliance strategy increasingly dependent on natural gas. In the longer term, both coal and natural gas will require CCS technologies to meet the emission reduction targets contemplated by HR 2454.

Gene Trisko is an attorney in private practice who has represented the UMWA as an NGO at all major United Nations climate negotiations since the 1992 Rio Treaty.

--- Please visit our website at <http://www.ujae.org> ---