



LEVELING THE PLAYING FIELD

Policy Parity
for Carbon Capture
and Storage
Technologies

November 2015



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National Coal Council – Leveling the Playing Field



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The National Coal Council is a Federal Advisory Committee to the U.S. Secretary of Energy. The NCC advises, informs and makes recommendations to the Secretary on matters requested by the Secretary relating to coal or the coal industry.

National Coal Council – Leveling the Playing Field



The Secretary of Energy
Washington, DC 20585

September 18, 2015

Mr. Jeffrey Wallace
Chairman, The National Coal Council, Inc.
1101 Pennsylvania Avenue, NW, 6th Floor
Washington, DC 20004

Dear Chairman Wallace:

I am writing today to request the National Coal Council (NCC) develop a white paper that focuses on incentives and policies that can be employed to level the playing field for deploying Carbon Capture and Storage (CCS) technologies.

The white paper should focus on policy parity measures that advance CCS technologies. The questions to be addressed are:

- (1) What incentives and policies can be employed to level the playing field for the deployment of CCS technologies? This white paper would provide an assessment of the incentives and policies used to advance all the low-carbon technologies.
- (2) What are the opportunities to remove regulatory obstacles, address market failures, adjust tax policies and utilize time-limited subsidies for clean energy technologies that could be employed to expedite and advance the deployment of CCS?

The white paper would be undertaken by the NCC's newly-formed Executive Advisory Board of the NCC. I ask that the white paper be completed before the COP21 meeting in Paris in late November.

Upon receiving this request and establishing your internal working groups, please advise me of your schedule for completing the white paper. The Department looks forward to working with you in this effort.

Sincerely,

A handwritten signature in black ink, appearing to read "Ernest J. Moniz".

Ernest J. Moniz





November 12, 2015

The Honorable Ernest J. Moniz
U.S. Secretary of Energy
U.S. Department of Energy
1000 Independence Ave., SW
Washington, DC 20585

Dear Secretary Moniz:

On behalf of the members of the National Coal Council (NCC), we are pleased to submit to you, pursuant to your letter dated September 18, 2015, the white paper “Leveling the Playing Field: Policy Parity for Carbon Capture and Storage Technologies.” The white paper’s primary focus is to recommend incentives and policies that can be employed to level the playing field for deploying CCS technologies. We are pleased to have completed this work through the NCC’s newly formed rapid-response initiative, ensuring that your request for guidance could be provided in advance of the COP21 meeting in late November.

The principal theme of the NCC’s Leveling the Playing Field white paper is that federal policy has severely tilted the energy playing field. Existing incentives for CCS are simply too small to bridge the gap between the cost and risk of promising, but immature, CCS technologies vis-à-vis other low-carbon technology options. While the U.S. Department of Energy has stewarded a successful research and development program to spur early development of CCS technologies, insufficient overall support has hindered commercial deployment.

Other low carbon technologies have benefitted from substantial government support. The success of policy and financial incentives afforded to the renewable energy industry provides ample evidence that government support can be the critical enabler for bringing scale and speed to clean energy technology deployment.

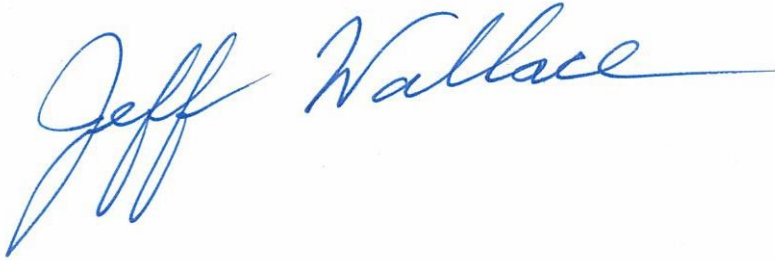
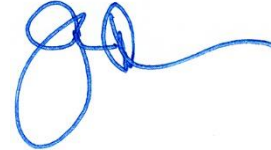
The National Coal Council is pleased to offer a menu of options that can be employed to level the playing for CCS. These include financial incentives, regulatory improvements, and research, development and demonstration catalysts. No single incentive by itself will provide the parity needed to effectively deploy CCS technologies. The optimal mix of incentives will need to be evaluated and provided on a project-by-project basis.

National Coal Council – Leveling the Playing Field

We are confident that this country will succeed in meeting our global carbon dioxide emission reduction goals when we commit with urgency to the deployment of CCS technologies. Such commitment begins with the establishment of policies and incentives to level the playing field for CCS.

Thank you for the opportunity to prepare this white paper. The Council stands ready to address any questions you may have regarding its recommendations and other contents.

Sincerely,

A handwritten signature in blue ink that reads "Jeff Wallace". The signature is written in a cursive style with a long horizontal line extending to the right.A handwritten signature in blue ink that reads "Glenn Kellow". The signature is written in a cursive style with a long horizontal line extending to the right.

Jeff Wallace
NCC Chair

Glenn Kellow
NCC Study Chair

LEVELING THE PLAYING FIELD

Policy Parity for Carbon Capture and Storage Technologies

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Policy Parity for Carbon Capture and Storage Technologies

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Executive Summary

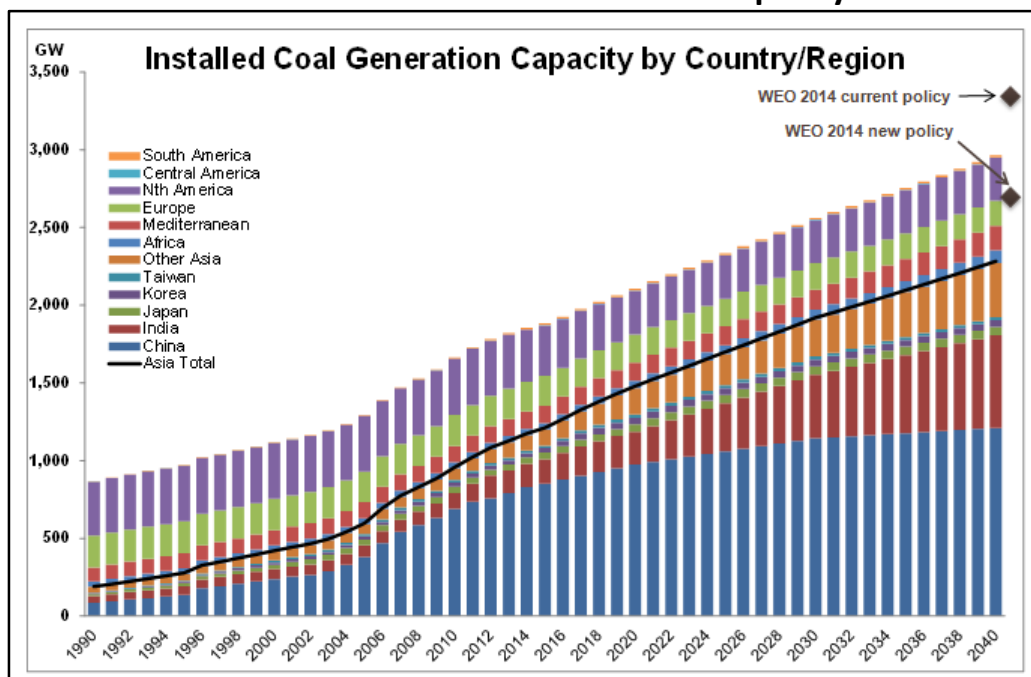
Federal energy and environmental policy has severely tilted the energy playing field. Secretary Moniz has requested the National Coal Council (NCC) make recommendations to level the playing field for carbon capture and storage (CCS) and provide "policy parity."

Existing incentives for CCS are simply too small to “bridge the chasm” – as the NCC put it earlier this year – between the cost and risk of promising but immature CCS technologies and other technology alternatives. While CCS is commercially deployed in some industrial sectors and technically demonstrated at electric power plants, power generation with CCS remains expensive today compared to other technologies such as natural gas combined cycle (NGCC) or heavily subsidized renewables. The U.S. Department of Energy (DOE) has stewarded a successful research and development program to spur early development of CCS technologies, but without sufficient government support and incentives, commercial CCS deployment has lagged.

Absent commercial-scale deployment, developers have no history to understand technical risks, frequency and duration of down time, and other critical factors that become known only with operation. Today, the world’s first and only operating commercial-scale power plant with CCS has successfully achieved a capture rate of 80% of the plant’s carbon dioxide (CO₂), but has been unable to maintain that level of performance and has been operational just 40% of the time because of technical complications.¹

With broad deployment, technological experience and confidence will rise, and costs will decline. Policy parity is essential to this progress.

Installed Coal-fueled Generation Capacity



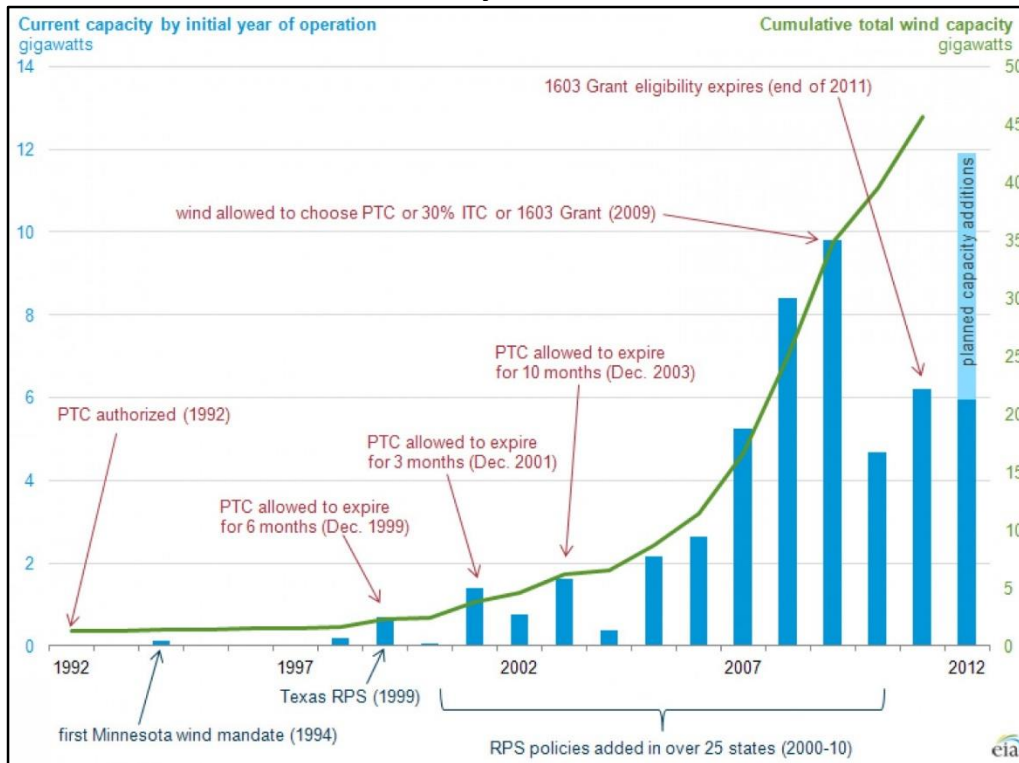
Source: World Coal Association

Coal and other fossil fuel use will keep rising globally as the world adds, per the United Nations, three billion more people to cities in the next 40 – 50 years.² To achieve climate goals and address fossil emissions, the world *must* have CCS.³ Commercializing CCS requires a level playing field.

Cross-functional experts within the NCC’s working groups have rigorously assessed the incentives and policies needed to level the playing field. There is consensus among them that the recommendations in this report will bring needed advances to development and deployment of CCS technologies.

Other clean technologies have benefitted from substantial government support. In 1992 when Congress enacted the Section 45 renewable energy tax credit, the United States had less than 2,000 megawatts (MW) of installed wind generating capacity.⁴ Today there are 69,471 MW of installed wind capacity.⁵ Wind energy prices have dropped from more than \$50 per-megawatt-hour (/MWh) in the late 1990s to less than half that cost in 2014.⁶ The industry credits government policy for its success: “With a two-thirds reduction in the cost of wind energy over the last six years, the renewable production tax credit (PTC) is on track to achieving its goal of a vibrant, self-sustaining wind industry.”⁷

U.S. Wind Industry: Incentives & Growth



Source: ALSTOM

National Coal Council – Leveling the Playing Field

In 2000, the U.S. had less than 4 MW of installed photovoltaic solar capacity, at an installed cost of nearly \$10 per watt (/W).⁸ In 2013, the U.S. had 6,000 MW of installed photovoltaic solar capacity at an average installed cost of roughly \$2.75/W.⁹ Today there is more than 22,700 MW of solar generating capacity overall.¹⁰ The industry touts 2015 as a “record-breaking” year in which more than 40% of all new capacity additions are solar.¹¹ As with wind energy, the industry credits government policy for its success: “Since the implementation of the investment tax credit (ITC) in 2006, the cost to install solar has dropped by more than 73%.”¹²

The policies that have driven these rapid deployment growth and cost reduction are a combination of Federal incentives and State renewable energy standards that mandate growing use of renewable energy. To satisfy the increasing State renewable energy generation requirements, an additional 94,000 MW of renewable energy will need to be built by 2035.

Figure A.1. Incentives for Renewable Electricity Generation Compared with Electricity Generation with CCS

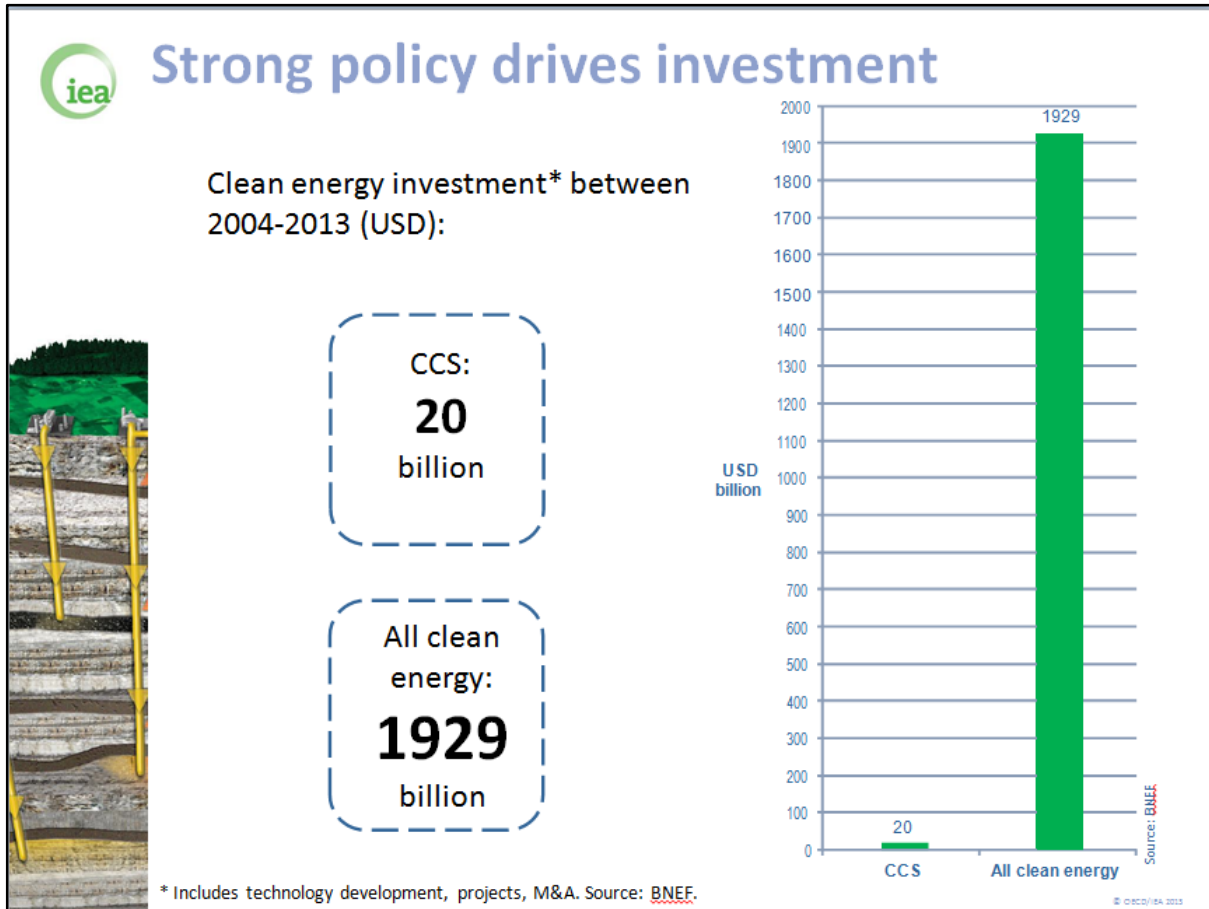
<u>INCENTIVE</u>	<u>RENEWABLES</u>	<u>CCS</u>
DOE Budget (2012-2016)¹³		
FY 2016 (Requested)	\$645 Million	\$224 Million
FY 2015	\$456 Million	\$188 Million
FY 2014	\$450 Million	\$200 Million
FY 2013	\$480 Million	\$186 Million
FY 2012	\$480 Million	\$182 Million
Total DOE Budgets:	\$2.5 Billion	\$980 Million (CCS Demonstration: \$0)
Tax Credits (2010-2014)¹⁴		
Investment Tax Credit	\$2.1 Billion	\$1 Billion
Production Tax Credit	\$7.6 Billion	\$0 ¹⁵
ARRA §1603 Grants in Lieu of Credit	\$24 Billion	\$0
Investment in Advanced Energy Property	\$2.1 Billion	\$0
Accelerated Depreciation for Energy Property	\$1.5 Billion	\$0
Total Revenue Cost:	\$37.3 Billion	\$1 Billion
Other Federal Programs		
Loan Guarantees (EPA Act '05 §1703)	Yes (\$13.9 billion)	Yes (\$0)
Mandatory Purchase Requirement (PURPA § 210)	Yes	No
Siting and Interconnection Preferences (e.g., FERC Order 792)	Yes	No
Clean Energy Credits (EPA, 111(d) Existing Power Plant Rule)	Yes	No
State Programs		
Net Metering	44 States	0 States
Renewable Energy Standards	29 States	5 States (CCS applied to standard: 0)

NOTE: DOE issued a solicitation for up to \$8 billion in loan guarantees for advanced fossil energy projects on December 12, 2013. To date, no loan guarantees have been made for an advanced fossil energy project. It is unclear whether any applications have been submitted.

As Table A.1. shows, government support to launch CCS is not remotely comparable to renewables.

A decade from today, it will be agreed that the incentives which proved effective in leveling the playing field for CCS technology deployment were those which enabled project financing to occur. These fall into two categories: those which provide up-front financial support for projects, and those which assure guaranteed revenue over the life of projects.

Public Policy Drives Investment



Source: Carbon Capture and Storage: Perspective from the IEA
Ellina Levina, Sydney Australia, September 2, 2014

In its January 2015 report, *Fossil Forward: Revitalizing CCS – Bringing Scale and Speed to CCS Deployment*,¹⁶ the NCC recommended policy parity for CCS. In September, Secretary of Energy Moniz requested the NCC report on policy parity measures that would level the playing field for CCS.

Recommendations

The NCC recommends a significant ramping up of incentives to “bridge the chasm” for CCS and, per the Secretary’s request, to provide policy parity. These recommendations will address the policy mismatch between actual and needed CCS technology funding, and between funding for CCS and other low-carbon energy resources.

The recommendations provide a menu of financial support options that will provide the necessary support for CCS and constitute policy parity. As with incentives for other energy resources, it is not intended that all of these incentives will be available for each project. Several of the proposed incentives should be crafted as alternatives – much as with renewables the production tax credit, investment tax credit, and cash grant programs have operated as alternatives.

No single proposed incentive should be viewed as a self-sufficient independent recommendation. A combination of support mechanisms spurred renewables development, and that is what is needed for CCS. If offering loan guarantees alone was sufficient to spur commercial CCS deployment, we would have more projects in development today.

A key recommendation is to institute a “contracts for differences” or CFD structure, available for a limited number of CCS projects, under which projects would bid for financial support making use of a combination of the proposed incentives. This structure is in use in the United Kingdom, whose program is described in Appendix 5. By way of example, a CFD structure could provide a power plant contract recipient with a CCPI grant to reduce capital cost, provide a loan guarantee to reduce borrowing cost, and make use of tax credits to reduce the cost of electricity over time. Another applicant may prefer to request variable price support for electricity, as offered in the U.K, or variable price support for CO₂ sold from the facility, in place of other incentives. The CFD structure may be the single most important mechanism to spur CCS development and deployment, but only if the incentives underlying it are sufficient.

Former Senate Energy & Natural Resources Committee Chairman Jeff Bingaman (D-NM) proposed legislation several years ago authorizing DOE to enter into up to 10 contracts for technical and financial support for CCS projects. We recommend providing the CFD structure for at least the first 5-10 GW of projects with CCS on a competitive basis. This could include projects already in the CCPI program. While several projects received limited grants and underwent substantial planning, only two are under construction and none are complete.

These options should be deployed in a manner to result in operating projects (particularly commercial demonstrations and large-scale pilots), support a diverse set of technologies in a variety of circumstances and locations, minimize Federal outlays, and minimize distortions of markets that have occurred from implementation of incentives for other low-carbon energy sources.

In its 2014 annual survey of power generators and technology developers, the Global CCS Institute found that the top three enablers for CCS projects were 1) access to direct subsidies, 2) access to viable CO₂ storage, and 3) offtake arrangements offering guaranteed prices.¹⁷ We include proposals for each of these below. As will be apparent, many of these recommendations require congressional enactments. Appendix 2 shows interest in Congress in supporting CCS, including recently among senior congressional leaders.¹⁸

Financial Incentives

- **Contracts for Differences** – DOE should provide for a CFD structure under which a limited number of projects – at a minimum the first 5-10 GW of output from facilities with CCS – can receive a combination of the incentives described below.
- **Limited Guaranteed Purchase Agreements** – In order to obtain financing, a limited number of pioneering facilities with CCS should receive a guarantee that their output will be purchased. This is key to the development of an immature technology with a yet uncertain risk profile and a potential for significantly lower cost. It also is a key element in parity, as renewables have benefited from PURPA mandatory purchase requirements. This incentive should be limited in scope to cover at least the first 10 GW of output from facilities with CCS, be designed to encourage geographically diverse projects, and minimize impacts on electricity markets.
- **Market Set Aside** – True parity would entail a mandatory market set-aside, akin to State renewable energy requirements. As noted by LBNL, the vast majority of renewables construction has occurred in States with an active or impending RES. One mechanism to provide a market set aside is a “baseload allowance.” Fossil technologies that deploy CCS or other immature carbon reducing technologies and meet a defined carbon emissions rate while providing baseload power would be eligible for the credit. Given the importance of CCS to meeting climate goals, we recommend a Federal mechanism be explored to authorize a portion of any State-mandated RES to be met through use of qualifying low-carbon fossil baseload, similar to those in Utah, Michigan, Ohio, West Virginia, and Massachusetts.
- **Clean Energy Credits** – Fossil projects with CCS should receive credit under applicable programs for 100% of CO₂ emissions avoided by deployment of CCS. Programs that currently allocate extra clean energy credits for renewables either should make the same credit available to fossil with CCS, or the extra crediting should be removed to assure parity.
- **Tax Credits and Price Interventions** – Guaranteed purchase agreements, and the ability to attract financing that accompanies it, is only part of the equation. Facilities will not be built by entities subject to traditional utility regulation if State utility commissions determine the cost is too high. In areas with EOR opportunity, incentives could involve price support for CO₂ sales. Below are specific proposals:
 - **Production Tax Credit** – Policy makers should provide a tax credit for production of electricity with CCS equivalent to that for renewables in Section 45. Options for structuring the credit could include (a) applying the credit consistent with the lower available inflation-indexed rate in Section 45 (i.e., 1.2¢/kWh) for capture at a new facility that brings the rate of emissions to 1,400 lbs./MWh, increasing proportionately to 2.3¢/kWh as the capture and storage rate increases toward 100%; or (b) applying the full 2.3¢/kWh credit to the number of kWh dispatched, multiplied by the capture percentage.

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- **CO₂ Price Stabilization** – Establish a “variable price support” program for CO₂ sequestration under which applicants would bid to DOE for financial support payments for CO₂, tied to the market price for oil (where EOR opportunities are available). This variable price support would be used under CFD agreements.
- **Electricity Price Stabilization** – Establish a price support program for electricity under which applicants would bid to DOE for financial support for a limited number of projects. The support would be based on the delta between the amount needed to achieve a commercial rate of return and the amount that can be earned, in the case of regulated markets, at just and reasonable rates, or in the case of deregulated markets, at projected market rates. This variable price support would be used under CFD agreements.
- **Revise CO₂ Injection Credit** – The Section 45Q tax credit should be revised as follows:
 - Eliminate the requirement that the recipient both capture and inject the CO₂ (which may not be the case, for example, with a power plant selling CO₂ to the oil field)
 - Assure that injection that qualifies under existing verification mechanisms as sequestration is satisfactory to obtain the credit
 - Provide for transferability of the credit between parties in the capture and injection chain of custody; and
 - Increase the credit to \$40/ton for beneficial reuse (*e.g.*, EOR storage) and \$60/ton for other geologic storage.
- **Tax-Preferred Bonds** – A variety of activities can be funded by tax-preferred and tax-exempt bonds. Renewable projects funded by local governments and electric cooperatives may issue Clean Renewable Energy Bonds under Section 54 of the Internal Revenue Code to finance clean energy projects (those which also are covered by the Section 45 tax credit). Approaches could include extending the Section 54 approach to CCS, or qualifying CCS projects for use of exempt facility bonds issued under Section 142.
- **Master Limited Partnerships (MLPs)** – Section 7704 of the Internal Revenue Code provides that business structures receiving at least 90% of their income from “qualifying income” can be treated as master limited partnerships for tax purposes; therefore, their income will be taxed only at the individual level, rather than both the corporate and individual level. Currently neither renewables nor low-carbon fossil technologies such as CCS qualify for this treatment. If renewables are made eligible for such treatment, parity requires that CCS also qualify.¹⁹

- **Loan Guarantees** – As indicated above, DOE’s loan guarantee program has helped renewables, but not CCS. Congress enacted a special \$6 billion program to pay for the credit subsidy cost of renewables, another dis-parity with fossil deploying CCS. The loan guarantee program should be revised to provide opportunity for the same credit subsidy relief for fossil projects as has been provided to renewable projects under the Section 1705 program.

Regulatory Improvements

- **Regulatory Blueprint** – DOE must take the lead in developing a regulatory blueprint which removes barriers to the construction and development of projects with CCS. This blueprint would be applicable to facilities for carbon capture (*e.g.*, industrial facilities such as power stations), transportation, and injection. Given its charter and expertise, DOE is central to the development of this blueprint with sister agencies, which would include such elements as addressing the specific regulatory barriers below.
- **Remove Injection Barriers** – EPA’s 111(d) existing power plant and 111(b) new power plant rules both provide that CO₂ from power plants regulated by the rule that is injected at oil and gas wells be reported under more stringent reporting rules than is currently required. Some CO₂ users have said this will discourage rather than encourage their use of CO₂ from these sources in the oilfield, and that associated regulatory obligations may conflict with State natural resource law. Federal policy should encourage and facilitate reuse of CO₂ from CCS operations, not discriminate against it.
- **New Source Review** – Concerns have been raised that retrofits of existing power plants to install carbon capture could trigger NSR requirements of the Clean Air Act. Such retrofits would constitute a “physical change” at the facility, and some may argue this could result in a significant net emissions increase. If we are to reduce CO₂ emissions from existing facilities in the U.S., government policy must eliminate this uncertainty in order to encourage rather than discourage installation of CO₂ emission control equipment.
- **Infrastructure Siting** – Federal policy makers should consider Federal eminent domain authority for the siting and construction of CO₂ pipelines, like the authority provided under the Natural Gas Act for natural gas pipelines could be provided. If a State does not have authority to provide for siting of a pipeline, or fails to act within a reasonable period, FERC should be available as a backstop siting and permitting authority.
- **Storage Siting** – The NCC recommends that DOE identify and certify at least one reservoir which is capable of storing a minimum of 100 million tons of CO₂ at a cost of less than \$10/ton in each of the seven regions covered by DOE’s Regional Carbon Sequestration Partnership program.

Research, Development and Demonstration

- **Align Research, Development, & Demonstration (RD&D) Funding With Other Fuels** – DOE needs to increase substantially the budget for RD&D funding for CCS. The CURC-EPRI Roadmap is the industry’s best-supported estimate of the funding needed for CCS RD&D. Even if fully funded, the CURC-EPRI Roadmap falls short of parity with renewables RD&D. The NCC recommends fully funding CCS RD&D at a minimum as recommended in the Roadmap. That would include funding an 80% Federal cost share for early stage RD&D, 100% Federal cost share for large-scale pilots, and a fully funded 50% cost share for commercial demonstrations.²⁰

Communication and Collaboration

- **Vigorously Explain Reality** – First and foremost, DOE must be a tireless advocate in all venues for recognition that fossil fuels will be used in coming decades to a greater extent than today to fuel a more populous, developed, urban world. Those who deny these facts in the name of addressing climate change not only harm fossil fuels and ambitions for improved health and quality of life, but diminish the likelihood of meaningful CO₂ emission reductions.
- **Initiate Projects Immediately** – The NCC recommends that DOE propose an international pool of funds specifically set up for the implementation of CCS demonstration projects at scale. The U.S. should initiate collaboration within the next year on 5-10 GW of international demonstration projects (in addition to the 5-10 GW of U.S.-based projects recommended earlier) advancing DOE’s program objectives and promoting foreign policy interests.

¹ Mike McKinnon, *Newly Revealed SaskPower Chart Shows Capture Performance Not Improving*, GLOBAL NEWS, Nov. 2, 2015 available at: <http://globalnews.ca/news/2313488/newly-revealed-saskpower-chart-shows-capture-performance-not-improving/>.

² See Kulwant Singh, *Urban Electric Mobility Initiative 6*, UN-HABITAT, <https://www.iea.org/media/workshops/2015/towardsaglobalevmarket/C.3UNHABITAT.pdf>.

³ Tony Blair, *Tony Blair Speaks on Breaking The Climate Deadlock* (Jun. 26, 2008) <http://www.tonyblairoffice.org/speeches/entry/tony-blair-speaks-on-breaking-the-climate-deadlock/> (“The vast majority of new power stations in China and India will be coal-fired; not ‘may be coal-fired’; will be. So developing carbon capture and storage technology is not optional, it is literally of the essence.”)

⁴ Lori Rugh, *American Wind Industry: Past and Future Growth 4*, AM. WIND ENERGY ASS’N available at: http://www.trade.gov/td/energy/AWEA%20Wind%20Power%20Presentation_Final.pdf.

⁵ AM. WIND ENERGY ASS’N, *U.S. Wind Industry Third Quarter 2015 Market Report – Executive Summary 3* (Oct. 22, 2015) available at: <http://awea.files.cms-plus.com/FileDownloads/pdfs/3Q2015%20AWEA%20Market%20Report%20Public%20Version.pdf>.

⁶ Lawrence Berkeley Nat’l Lab., *2014 Wind Technologies Market Report Highlights 4*, U.S. DEP’T OF ENERGY (Aug. 2015) available at: <http://energy.gov/sites/prod/files/2015/08/f25/2014WindTechnologiesMarketReportHighlights8-11.pdf> (showing, as well, that wind prices reached a high of nearly \$70/MWh in 2009, driven by increases in the cost of wind turbines).

⁷ AM. WIND ENERGY ASS’N, *AWEA white paper: Renewable Production Tax Credit has driven progress and cost reductions, but the success story is not yet complete* (Sep. 10, 2015) <http://www.awea.org/MediaCenter/pressrelease.aspx?ItemNumber=7877> (“The Production Tax Credit (PTC) and alternative Investment Tax Credit (ITC) have enabled private sector investments in the American workforce, domestic manufacturing, and R&D that have significantly reduced the cost of wind energy.”)

⁸ SOLAR ENERGY INDUS. ASS’N, *Solar Market Insight Report 2013 Year in Review*, <http://www.seia.org/research-resources/solar-market-insight-report-2013-year-review>.

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⁹ *Id.*

¹⁰ SOLAR ENERGY INDUS. ASS'N, *Solar Industry Data: Solar Industry Breaks 20 GW Barrier – Grows 34% Over 2013*, <http://www.seia.org/research-resources/solar-industry-data>.

¹¹ *Id.*

¹² *Id.*

¹³ Budgets for “Renewables” reflect funds budgeted to the Office of Energy Efficiency and Renewable Energy for the following line items: “Solar Energy,” “Wind Energy,” “Water Energy,” and “Geothermal Technologies.” Budgets for “CCS” reflect funds budgeted to the Office of Fossil Energy for the line items: “Carbon Capture” and “Carbon Storage.” As noted in the chart, no funds were budgeted for CCS demonstration projects (*i.e.* CCPI). The budget for CCS does not reflect funding for technologies not under the CCS budget that have application beyond electric generation, such as oxycombustion and chemical looping. Budgets available at <http://www.energy.gov/budget-performance>.

¹⁴ Molly Sherlock and Jeffrey Stupak, ENERGY TAX INCENTIVES: MEASURING VALUE ACROSS DIFFERENT TYPES OF ENERGY RESOURCES 7, Tbl. 2, CONG. RESEARCH SERV., R41953 (Mar. 19, 2015) available at: <https://www.fas.org/spp/crs/misc/R41953.pdf>.

¹⁵ While approximately \$30 million of this credit has been claimed, we could find no evidence of the credits being claimed by power projects with CCS.

¹⁶ NAT'L COAL COUNCIL, FOSSIL FORWARD – REVITALIZING CCS: BRINGING SCALE & SPEED TO CCS DEPLOYMENT 12 (Feb. 2015) available at: <http://www.nationalcoalcoalcouncil.org/studies/2015/Fossil-Forward-Revitalizing-CCS-NCC-Approved-Study.pdf>.

¹⁷ GLOBAL CCS INSTITUTE, THE GLOBAL STATUS OF CCS 2014 84, Tbl. 5.1 (Nov. 5, 2014) available at: <http://hub.globalccsinstitute.com/sites/default/files/publications/180923/global-status-ccs-2014.pdf>.

¹⁸ See, e.g. S. 2089, *supra* note **Error! Bookmark not defined..** Other recommendations can be implemented by DOE without statutory changes.

¹⁹ Note that the House and Senate legislation that has been introduced to extend MLP status to renewables and CCS. Master Limited Partnership Parity Act of 2015, H.R. 2883 and S. 1656, 114th Cong. (2015).

²⁰ CURC-EPRI ADVANCED COAL TECHNOLOGY ROADMAP, *supra* note **Error! Bookmark not defined..**



The National Coal Council (NCC) was chartered in 1984 based on the conviction that an industry advisory council on coal could make a vital contribution to America’s energy security. The NCC’s founders believed that providing expert information could help shape policies relevant to the use of coal in an environmentally sound manner. It was expected that this could, in turn, lead to decreased dependence on other less abundant, more costly, less secure sources of energy.

These principles continue to guide and inform the activities of the NCC. Coal has a vital role to play in the future of our nation’s electric power, industrial, manufacturing, and energy needs. Our nation’s primary energy challenge is to find a way to balance our social, economic, and environmental objectives.

Throughout its 30-year history, the NCC has maintained its focus on providing guidance to the Secretary of Energy on various aspects of the coal industry. The NCC has retained its original charge to represent a diversity of perspectives through its varied membership and continues to welcome members with extensive experience and expertise related to coal.

The NCC serves as an advisory group to the Secretary of Energy, chartered under the Federal Advisory Committee Act (FACA), providing advice and recommendations to the Secretary of Energy on general policy matters relating to coal and the coal industry. As a FACA organization, the NCC does not engage in lobbying activities.

The principal activity of the NCC is to prepare reports for the Secretary of Energy at his/her request. During its 30-year history, the NCC has prepared more than 30 studies for the Secretary, at no cost to the Department of Energy. All NCC studies are publicly available on the NCC website.

Members of the NCC are appointed by the Secretary of Energy and represent all segments of coal interests and geographic distribution. The NCC is headed by a Chair and Vice Chair who are elected by its members. The Council is supported entirely by voluntary contributions from NCC members and receives no funds from the Federal government. Studies are conducted solely at the expense of the NCC and at no cost to the government.

The National Coal Council values the opportunity to represent the power, the pride, and the promise of our nation’s coal industry.

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