

**McKinley-Schrader Discussion Draft Section-by-Section**

Section Number	Section Name	Description of Key Provisions
Section 101	Purposes	This section enumerates the purposes, all of which relate to driving development and deployment of low- and zero-carbon power technologies, and to build a competitive market for them
Section 102	Short title; table of contents	
Section 103	Definitions	
<b>Title 1</b>	<b>CCUS</b>	<b>Carbon Capture, Utilization and Storage</b>
Subtitle A	Research, Development, and Demonstration for CCUS Technologies	
Section 111	Fossil Energy Objectives	This section adds new objectives on carbon capture, utilization and storage to the Energy Policy Act of 2005.
Section 112	Carbon Capture Technologies for Power Systems	<p>This section directs DOE to conduct a RD&amp;D and commercial application program to support—</p> <ul style="list-style-type: none"> <li>• Large-scale CCUS pilot projects;</li> <li>• At least 3 carbon capture pilot test centers;</li> <li>• Commercial scale CCUS demonstration projects; and</li> <li>• Authorizes expenditures of \$2.2 billion per year for 5 years</li> </ul> <p>And directs GAO to conduct a study of the program</p>
Section 113	Carbon Storage Validation and Testing	<p>This section directs DOE to carry out a carbon storage RD&amp;D program that</p> <ul style="list-style-type: none"> <li>• Focuses on a variety of geologic settings;</li> <li>• Establishes regional carbon sequestration partnerships to carry out large-scale carbon sequestration demonstrations;</li> <li>• Transitions the demonstrations into integrated commercial storage complexes;</li> <li>• Collects data; and</li> </ul> <p>Authorizes appropriations of \$250 million per year for 5 years.</p>
Section 114	Carbon utilization	Directs DOE to—

		<ul style="list-style-type: none"> <li>• carry out a carbon utilization RD&amp;D program that assesses and monitors potential changes in life cycle carbon dioxide emissions and identifies and evaluates novel uses for carbon; and</li> <li>• contract with the national academies to conduct a study on carbon utilization; and</li> </ul> <p>Authorizes expenditures of \$75 million per year for 5 years.</p>
Section 115	Advanced Energy Systems	<ul style="list-style-type: none"> <li>• Creates a DOE program for advanced energy systems, including high efficiency turbines, supercritical CO<sub>2</sub>, oxy-combustion systems, chemical looping, et al; and</li> <li>• Authorizes appropriations to the program \$1.275 billion per year for 5 years.</li> </ul>
Subtitle B	Initial deployment of commercial-scale CCUS capacity	
Section 121	Initial Deployment of Commercial Scale CCUS	<ul style="list-style-type: none"> <li>• Allows DOE to support commercial scale deployment of CCUS through power purchase agreements, contracts for differences, or direct ownership of CCUS facilities;</li> <li>• Allows DOE to support up to 3 GW of CCUS capacity or make up to a \$10 billion investment;</li> <li>• Calls for a DOE study to evaluate whether the investments were adequate to stimulate and support robust commercial deployment of CCUS; and</li> <li>• If the study finds more investment is needed, then DOE can support up to an additional 8 GW of CCUS.</li> </ul>
Subtitle C	Federal Support for Commercial Deployment of CCUS	
Section 131	Enhancement of Carbon Dioxide Sequestration Credit	<p>Amends section 45Q of the Internal Revenue Code of 1986 to—</p> <ul style="list-style-type: none"> <li>• extend the tax credit for carbon storage to 20 years from 12 years;</li> </ul>

		<ul style="list-style-type: none"> <li>extend the last year during which projects are eligible for the carbon capture tax credit from 2024 to 2030.</li> </ul>
Section 132	Reform of Loan Guarantee Program	Allows projects to get DOE loan guarantees even if they receive a tax credit or other financial assistance for clean coal technology.
Section 133	Private Activity Bonds for Carbon Dioxide Capture Facilities	<ul style="list-style-type: none"> <li>extends eligibility for private activity bonds to “qualified carbon dioxide capture facilities” that capture at least 65% of the CO<sub>2</sub>; and</li> <li>defines relevant terms.</li> </ul>
Section 134	Extension of Publicly Traded Partnership Ownership Structure	Extends the tax benefits of the publicly traded partnership ownership structure to CCUS-focused partnerships.
Section 135	Production tax credit for certain electricity generation using carbon capture utilization and storage	<p>Establishes a production tax credit for CCS projects (45U) that may be claimed as an alternative to 45Q. Intended to incentivize CCS projects for gas-powered generators that 45Q’s per-ton metric does not adequately reward. PTC formula:</p> <ul style="list-style-type: none"> <li>For fossil fuel generators using CCS, \$30 per mwh produced for saline storage, \$24 per mwh for EOR projects, multiplied by discount factor.</li> <li>For generators using qualified hydrogen or ammonia, formula is \$50 per mwh.</li> <li>Discount factor: 90 divided by annual CO<sub>2</sub> emissions rate (lbs/mwh), except: If rate &lt;90 lbs, discount = 1; if rate &gt;180 lbs, discount = 0</li> </ul>
Subtitle D	Support for Carbon Dioxide Transportation and Sequestration Infrastructure	
Section 141	Securing Geologic Reservoirs for Carbon Dioxide	<p>Directs DOE to establish a program to:</p> <ul style="list-style-type: none"> <li>identify geological storage resources to accept at least 100 million tons of carbon dioxide at a cost of less than \$10/ton;</li> <li>secure storage rights for those reservoirs; and</li> <li>obtain permits and approvals to enable CO<sub>2</sub> storage in those reservoirs.</li> </ul>
Section 142	Financial Assistance for Carbon Dioxide Sequestration Infrastructure Development	Directs DOE to provide grants to support pipeline infrastructure to transport CO <sub>2</sub> and sequestration facilities necessary to support long-term storage; and appropriates \$10 billion to support those grants.

Section 143	Geologic Sequestration Utilities	Directs DOE to— <ul style="list-style-type: none"> <li>• provide technical assistance to states to foster formation of CO<sub>2</sub> sequestration utilities by governmental and nongovernmental entities; and</li> <li>• report to Congress on the regulatory requirements that apply to CO<sub>2</sub> pipelines and sequestration and recommend changes to laws, regulations or practices to support the development of CO<sub>2</sub> sequestration.</li> </ul>
Section 144	Coordinated Permitting for Carbon Dioxide Pipeline and Sequestration Facilities	Provides for coordinated permitting of CO <sub>2</sub> pipelines under the Fixing America’s Surface Transportation Act by amending the definition of “pipeline” to include pipelines for the transport of CO <sub>2</sub> .
Section 145	Class II-B Permit for Carbon Dioxide Storage	Directs the EPA to undertake a rulemaking to establish a Class II-B CO <sub>2</sub> storage permitting program that would allow CO <sub>2</sub> injection in oil fields primarily as a means of CO <sub>2</sub> sequestration.
Section 146	Interagency Task Force on Carbon Dioxide Pipelines	Establishes an interagency CO <sub>2</sub> pipeline task force that includes representatives from DOE, Interior, EPA, DOT, FERC, other appropriate federal agencies, and states and tribes. The task force would conduct annual workshops with relevant federal agencies to discuss progress toward a functioning national system of CO <sub>2</sub> pipelines.

Section Number	Section Name	Description of Key Provisions
<b>Title II</b>	<b>Innovation in Renewable Energy, Energy Efficiency, and Storage</b>	
Section 201	Establishment of technology performance and cost targets	Directs DOE to establish technology performance and cost targets for 15-year innovation and commercialization programs for renewable energy, energy storage technologies, transmission technologies, building efficiency and industrial process technologies.
Section 202	Advanced innovation and commercialization program	Directs DOE, the National Labs, other agencies and private and academic partners to carry out RD&D programs designed to achieve the cost & performance targets established under section 301; also <ul style="list-style-type: none"> <li>• authorizes necessary appropriations;</li> <li>• directs DOE to establish a grants program to support early deployment of advanced technology; and</li> <li>• directs DOE and other agencies to establish federal procurement goals and deadlines for advanced renewables, storage, transmission, and building efficiency technologies.</li> </ul>
Section 203	Updating mobile homes	Provides grants and technical assistance to facilitate replacement of older mobile homes with energy efficient modular homes; also increases authorization for the low-income Weatherization Assistance program.
Section 204	Other authorizations of appropriations	Authorizes appropriations for: <ul style="list-style-type: none"> <li>(a) ARPA-E (ramp up to \$1B)</li> <li>(b) Regional innovation models: \$100M in FY2020 ramping to \$500M in FY2023</li> <li>(c) Grid modernization: ramping to \$650M in FY 2023.</li> <li>(d) Advanced land-based and offshore wind: ramping to \$400M in FY2023</li> <li>(e) Advanced solar: ramp up to \$600M in FY2023</li> <li>(f) Storage technologies: ramp to \$750M by FY2023</li> <li>(g) Buildings: ramp to \$670 million in FY2023</li> <li>(h) Industrial: ramp to \$840 million in FY2023</li> </ul>
Section 205	Tax credits	<ul style="list-style-type: none"> <li>• Establishes a Federal investment tax credit for electricity storage assets, involving a range of technologies;</li> <li>• Establishes a Federal investment tax credit for powering non-powered dams, while ensuring adequate environmental reviews are</li> </ul>

		<p>conducted and conservation safeguards are implemented;</p> <ul style="list-style-type: none"><li>• Establishes a Federal investment tax credit for offshore wind, with a ten-year applicability.</li><li>• Establishes a Federal investment tax credit for enhanced geothermal;</li><li>• Extends the production tax credit for land-based wind and solar for ten years;</li><li>• Renews the 48C Advanced Energy Manufacturing Tax Credit;</li><li>• Establishes energy efficiency tax credits for commercial and residential buildings that are performance-based and technology-neutral;</li><li>• Establishes electrification tax credits for commercial and residential building equipment that are performance-based; and</li><li>• Extends MLP treatment to renewables: authorize master limited partnerships to obtain favorable tax treatment for income derived from investments in renewable energy projects.</li></ul>
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Section Number	Section Name	Description of Key Provisions
<b>Title III</b>	<b>NUCLEAR: EXISTING AND ADVANCED PLANTS</b>	
Section 301	National Zero-Emissions Credit Program	Creates a Federal program to provide Zero Emission Credits to existing nuclear plants.
Section 302	Investment Tax Credit for Nuclear Energy Property	<ul style="list-style-type: none"> <li>• Extends the investment tax credit to “qualified nuclear energy property”;</li> <li>• Makes nuclear energy property put into service before January 1, 2025 eligible for a tax credit that starts at 30% (before December 31, 2021) and phases down to 26% in 2022 and then 22% in 2023 and phases out on January 1, 2026; and</li> <li>• Allows the assignment of the tax credit from qualified public entities without tax liability to an entity that can use the tax credit.</li> </ul>
Section 303	Expanding Federal Clean Electricity Purchasing Requirements	<ul style="list-style-type: none"> <li>• Increases the amount of clean electricity the federal government will purchase to 35% beginning in 2021 (from current 7.5% renewable energy); and</li> <li>• Allows nuclear and fossil with CCS to qualify as clean electricity; and</li> <li>• Allows the DOE to enter into a long-term power purchase agreement for nuclear power when needed for national security or mission-critical activities.</li> </ul>
Section 304	Authorization of Appropriations for Innovation in Nuclear Power	<p>Appropriates \$450 million annually for 6 years to—</p> <ul style="list-style-type: none"> <li>• Gateway for Accelerated Innovation in Nuclear (GAIN) vouchers, which give grantees access to the nuclear testing and research facilities of the national labs; and</li> <li>• Advanced Nuclear Technology Development Funding Opportunity announcements.</li> </ul>
Section 305	Modernizing the Nuclear Regulatory Commission	<p>Directs the NRC to—</p> <ul style="list-style-type: none"> <li>• compile and submit a report to Congress on ways to amend NRC processes, procedures and regulations with regard to new and advanced nuclear reactor designs;</li> </ul>

		<ul style="list-style-type: none"> <li>• report on the feasibility and implications of repealing restrictions on issuing a license to entities under foreign ownership or control;</li> <li>• report on the impact of elimination of mandatory hearing for uncontested license applications;</li> <li>• allow the use of informal hearing procedures unless the Commission decided formal procedure is necessary;</li> <li>• make hearings on licenses for uranium enrichment facilities optional unless requested by a person with an interest;</li> <li>• streamlines license application review process; and</li> </ul> <p>Appropriates \$20 million per year for five years to carry out the modernization of the NRC.</p>
Section 306	[Reserved]	
Section 307	Demonstration and Early Deployment of Advanced Nuclear Reactors	<p>Requires DOE to advance the research and development of advanced nuclear by—</p> <ul style="list-style-type: none"> <li>• carrying out at least 5 advanced nuclear reactor demonstration projects; and</li> <li>• appropriating \$1 billion a year for 5 years.</li> </ul>
Section 308	Advanced Nuclear Fuel Security Program	Creates an advanced nuclear fuel security program to make limited quantities of high-assay, low-enriched uranium available for use in testing and demonstration of advanced reactors.
Section 309	Authorization of lending authority Loan Guarantees Under Section 1703 of the Energy Policy Act of 2005	Expands and extends the DOE loan guarantee program for advanced nuclear projects and authorizes \$10 billion per year for 7 years in loans under the program.
Section 310	Expanding the Production Tax Credit for Advanced Nuclear Power	Expands the production tax credit for advanced nuclear power (Section 45J) by increasing the credit per kilowatt hour (from 1.8 cents/kWh to 2.7 cents per kWh) and the maximum amount of generation eligible for the credit (from 6,000 to 9,000 MW).

Title IV	Clean Electricity Standard	
Section 401	Certification of cost-effective market penetration of clean electricity technologies	<ul style="list-style-type: none"> <li>• Establishes a federal Decarbonization and Innovation Assessment Program to monitor progress on emissions and technology innovation</li> <li>• Defines “cost-effective market penetration” as either of the following 2 conditions being met:               <ol style="list-style-type: none"> <li>1. 3 GW of new zero-emissions capacity becomes commercially operational, <i>if</i>:                   <ol style="list-style-type: none"> <li>a) 1GW is from coal with CCUS</li> <li>b) Capacity that is federally procured does not count; or</li> </ol> </li> <li>2. If the cost of new, firm clean generation is determined to be not more than [10%] higher than existing generation</li> </ol> </li> <li>• Directs DOE to certify when the criteria for market penetration are met; defines terms for eligible technologies.</li> </ul>
Section 402	Federal clean electricity standard	<ul style="list-style-type: none"> <li>• Establishes a federal CES that requires utilities to purchase clean energy in increasing amounts over time to achieve emissions targets (80% CO<sub>2</sub> reduction by 2050).</li> <li>• Emissions baseline shall be the lesser of 2030 (projected) or year of enactment</li> <li>• First compliance period shall be 10 years after enactment or 2 years after cost-effective market penetration (S.401) is achieved.</li> <li>• Alternative Compliance Payment: [\$30 per MWH].</li> <li>• Clean Electricity Credits shall be tradeable.</li> <li>• Credits may be banked for future use.</li> <li>• Establishes civil penalties for noncompliance.</li> <li>• State and local programs are not preempted.</li> <li>• Alaska, Hawaii, and Puerto Rico are exempted.</li> <li>• Directs DOE to consider, in coordination with FERC, dynamic crediting methodologies, which would base crediting on displaced CO<sub>2</sub> emissions.</li> <li>• Directs DOE to substitute a dynamic crediting methodology or methodologies for crediting purposes if approved.</li> </ul>

Section 403	Regional Clean Electricity Planning Models.	<ul style="list-style-type: none"> <li>• Directs DOE to make available to the states one or more methodologies for regional clean electricity planning that could facilitate compliance with the Clean Electricity Standard under Section 402 at least cost and consistent with reliability needs.</li> </ul>
Section 404	Stand-by emissions performance standards	<p>EPA shall enforce GHG performance standards (section 111) for power plants only if:</p> <ul style="list-style-type: none"> <li>• Sectoral emissions rise by &gt;15%, or</li> <li>• Programs authorized under this act are not fully funded</li> </ul>