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The Energy Security and Independence Act of 2022



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Climate, Earth, and Society

ACKNOWLEDGEMENTS

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EXECUTIVE SUMMARY

The Energy Security and Independence Act of 2022, also known as Senate Bill S.4013, aims to promote U.S. energy independence through development of the national renewable energy capacity and the renewable energy systems component supply chain – with a goal of reaching 100% domestically generated renewable energy. This goal is accompanied by another, broader aim – to fight climate change by reducing the usage of fossil fuels.

To bring the goals of the bill to fruition, a program was constructed to launch both long-term industry focused programs and simultaneously prioritize initiatives and tasks that promote short-term community focused impact.

Short-term Community focused programs include:

- The installation of heat pumps and community rooftop solar on federal buildings in proximity of environmental justice communities
- Providing additional funding to the Weatherization Assistance Program
- A comprehensive workforce development program to ensure a smooth labor transition to the renewable energy sector

Long-term industry focused programs include:

- The formation of a “Domestic Renewable Energy Industrial Base Task Force” under the White House Office of Domestic Climate Policy
- A report to congress by the Secretary of Energy, which will identify and highlight opportunities and gaps in the transition to renewable energy
- Federal assistance to renewable energy projects across the country
- A state level Block Grant Program for renewable energy supply chains

The program design focuses on the first year implementation of the bill, while also setting the foundation for increased impact in the future.



Dr. Steven Cohen

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One of the defining features of Columbia University's MPA in Environmental Science and Policy is its three semester Workshop in Applied Earth Systems Policy and Management. In the summer and fall the Workshop is a management simulation where we take an environmental statute that has been proposed but not enacted and first learn to understand and communicate the science behind the problem and proposed solution and then develop a plan for implementing the program assuming it is finally passed into law. In the spring semester we build on what we've learned and do real projects for public sector clients. The team I worked with over the summer and fall has worked on a bill to decarbonize the American economy while building a modern and just domestic renewable energy industry.

This team had the daunting task of taking a huge and complex bill and deciding how to prioritize its many elements and begin the process of bringing the resources of the federal government into the battle against climate change. The group designed a practical program that would deliver short term and visible wins at the community level while building a long-term renewable energy industrial base.

The Workshop team worked extremely well together over the past two semesters and the quality and comprehensiveness of this report is the best evidence of their ability and sense of teamwork. The group spent thousands of hours from June until December researching renewable energy and climate science and exploring the policy and management issues central to the transition to decarbonizing the energy economy. I believe you will find this report illuminating and worthy of careful reading.

Steven Cohen

December 2022, New York City



Definitions From the Bill

Direct loan

A disbursement of funds by the Federal Government to a non-Federal borrower under a contract that requires the repayment of those funds with or without interest. Includes the purchase of, or participation, in a loan made by another lender; or a financing arrangement that defers payment for more than 90 days, including the sale of a government asset on credit terms.

Eligible Entity

A private entity, including a manufacturer, or a partnership of private entities.

Environmental Justice Community

A community with significant representation of one or more communities of color, low-income communities, or Tribal or indigenous communities that experience, or are at risk of experiencing, higher or more adverse human health or environmental effects as compared to other communities.

Heat Pump

A device that transfers heat from a colder area to a hotter area by using mechanical energy and is used to maintain a safe, comfortable, and affordable temperature in a building.

Public Heat Pump

A heat pump that is owned or operated by a unit of Federal, State, or local government, or a cooperatively owned utility.

Renewable Energy

Energy generated from a renewable energy source.

Renewable Energy Source

Wind, solar, tidal, wave, or geothermal energy.



Acronyms

DOE	Department of Energy
DPA	Defense Production Act of 1950
EECS	Office of Energy Efficiency and Community Solar Programs
EPA	Environmental Protection Agency
FEMP	Office of Federal Energy Management Programs
FIP	Formerly Incarcerated Persons
GHG	Greenhouse Gas
GSA	General Services Administration
HVAC	Heating, Ventilation, and Air Conditioning
IRA	Inflation Reduction Act
LPO	Loans Programs Office
MESC	Manufacturing and Energy Supply Chains
PM2.5	Particulate Matter 2.5 microns or less in diameter
PV	Photovoltaic
RFP	Request for Proposals
WAP	Weatherization Assistance Program



A DEFINING CRISIS

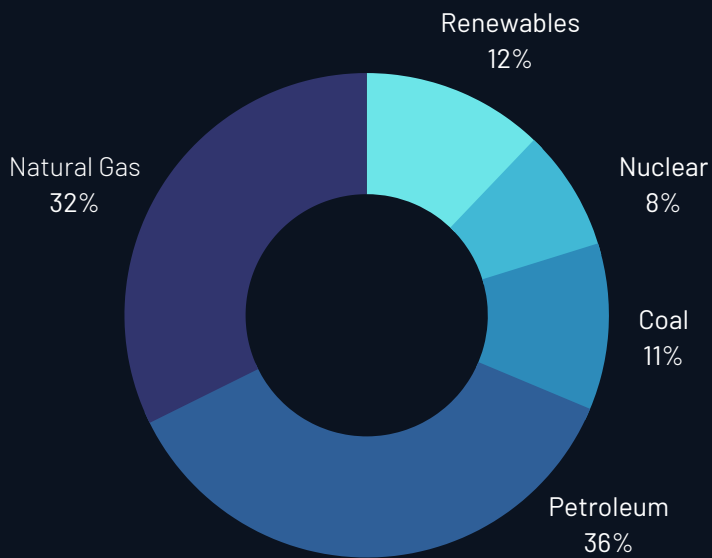
Anthropogenic climate change, driven largely by burning of fossil fuel for energy, is one of the most defining crises facing the world today. Climate change has wide-ranging implications on the earth's natural ecosystems that are vital for human welfare and survival.

In the Western United States, the Earth's warming climate has made droughts roughly 40% more severe, making it the region's driest stretch since 800 A.D. This has led to water shortages, increased pressure on farmers and communities, and threats to the hydroelectric energy supply. Additionally, acreage burned by wildfires more than doubled between 1990 and 2010. On the east coast, climate change has worsened the intensity of hurricanes and tropical storms, with 14 of the top 15 most costly tropical storms occurring since 2000. As of October 11, 2022 the United States had experienced 15 climate disasters resulting in over \$1 billion in losses 2022 year alone.

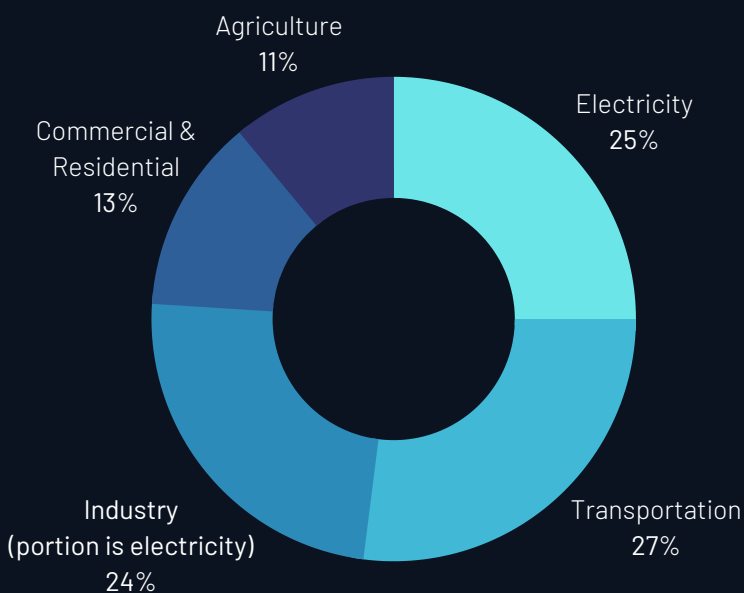
Furthermore, climate change exacerbates socioeconomic inequities that exist in the United States. Currently, low income households spend roughly 8.1% of their income on energy expenses, which is three times the proportion spent by non-low income households. Additionally, 1 in 3 households remain unable to meet basic energy needs. As electricity demand continues to grow in the backdrop of climate change, inequities will continue to widen, especially given the challenges that pervade the country's energy system and supply chain.

A Human Created Problem

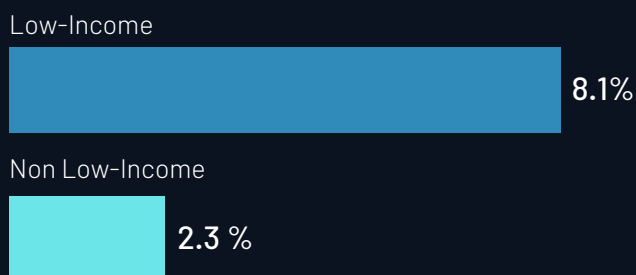
Despite these negative impacts of anthropogenic climate change, and its cause being rooted in the burning of fossil fuels, these fuels currently account for 79% of the United States energy production, with renewable energy accounting for only 12%. (Nuclear energy, which is considered to be "clean" but not "renewable", makes up the remaining 8%.)



U.S. Primary Energy Consumption by Source



U.S. CO2 Emissions by Sector



Average Household Spending on Energy

The burning of fossil fuels for energy has a large impact on the greenhouse effect that leads to global climate change. Testaments to the anthropogenic nature of the increase of global temperatures can be found in a variety of elements and natural processes. Additionally, the climate science community is nearly universally aligned in attributing climate change to human actions. In fact, human activities, including both the burning and extracting of fossil fuels and the emission of carbon dioxide, methane and particulate matter are responsible for almost all of the increase in GHGs in the atmosphere over the last 150 years, leading to environmental damage as well as being harmful to human health.



Global atmospheric CO₂ concentrations.

Health Impacts

Not only does the burning of fossil fuels create adverse effects on the environment, but it also takes a toll on the well-being of people. Exposure related illnesses can develop in those who have constant exposure to carbon emissions as well as the other byproducts of fossil fuel extraction and combustion. During extraction, benzene and formaldehyde are released, both of which are cancer-causing compounds. Additionally, the fumes created can cause or worsen respiratory conditions such as asthma. Around 17.6 million Americans are exposed to these conditions daily. During the combustion of fossil fuels in engines and motors, carbon monoxide and nitrous oxide are produced. Both of these compounds are considered poisonous and create smog in big cities. These compounds also contribute to adverse respiratory conditions.

Climate change has been proven to cause the hottest days of the year to gradually become hotter. This added heat can worsen existing conditions, such as cardiovascular diseases, or spark new illnesses such as heat stroke or heat exhaustion. Between the years of 1979 and 2018, over 11,000 Americans lost their lives due to heat-related causes.

Environmental Justice

According to the EPA, air pollution, including particulate matter in the air, disproportionately affects communities of color and low-income communities. Scientists reported that for PM2.5, those in poverty faced 35% more of a health burden than the overall population, non-white people had 28% higher, and Black people had a 54% higher burden. These patterns were reflected on the country, state, and county levels, showing that it is a wide-spread issue across the country, and an issue that impacts those who identify as Black the greatest.

Currently, groups all over the country are working to transition communities to clean energy. The Northeast Clean Energy Council for example, is working to implement policies that will assist in this transition. This includes policies that support clean jobs, eliminate energy systems that burn oil and policies that promote electric and zero-emission vehicles. One issue with this transition is that without the inclusion of communities of color and low-income people who are most impacted by climate change, we will continue to exacerbate the health disparities they are already facing.

The energy transition has the potential to adversely affect those who currently work in the fossil fuel industry as they will need to transition to different careers. This may require training on new skills, moving to new areas where jobs are available or early retirement.

Communities who rely heavily on electricity provided by fossil fuels may potentially be harmed by this transition as well. Without making clean energy cheap and accessible to all, low-income and communities of color may face energy insecurity as well as higher electric bills. Both fossil fuel extraction and production operations are primarily located in remote areas and where populations have higher income volatility. These communities will benefit substantially through health and environmental improvements, however they may suffer economically as these plants frequently provide high-paying jobs and large amounts of local tax revenue.

Negative externalities caused by fossil fuel production are disproportionately affecting certain communities. This could be the case for clean energy as well, for example the noise disruptions of wind turbines are more likely to affect rural and less educated populations, while having a greater benefit to urban populations. It is imperative that this transition happens in an equitable way that will eliminate any social or economic harm to communities who already take on a much higher burden.

Climate Change 101

Natural Greenhouse Effect

Carbon in its gas forms, primarily carbon dioxide and methane, contributes to an atmospheric phenomenon known as the greenhouse effect. In general, the greenhouse effect is the process that occurs when gas in the atmosphere traps heat energy. This heat primarily is the result of the earth's surface absorbing the sun's energy and re-emitting it back upwards. The presence of greenhouse gasses (GHGs), of which carbon dioxide and methane are two, makes earth around 14° C warmer and thus more habitable than it would be without them. Other greenhouse gasses include water vapor and nitrous oxide. The greenhouse effect as it naturally occurs is the reason why life is able to flourish on our planet.

Human Induced Greenhouse Effect

When we add carbon-based greenhouse gasses to the atmosphere through the burning of fossil fuels, we are increasing the number of heat-trapping molecules and therefore increasing the capacity of the atmosphere to cling to heat. Due to this, there is an increase in temperature of the atmosphere, oceans, and land surface.

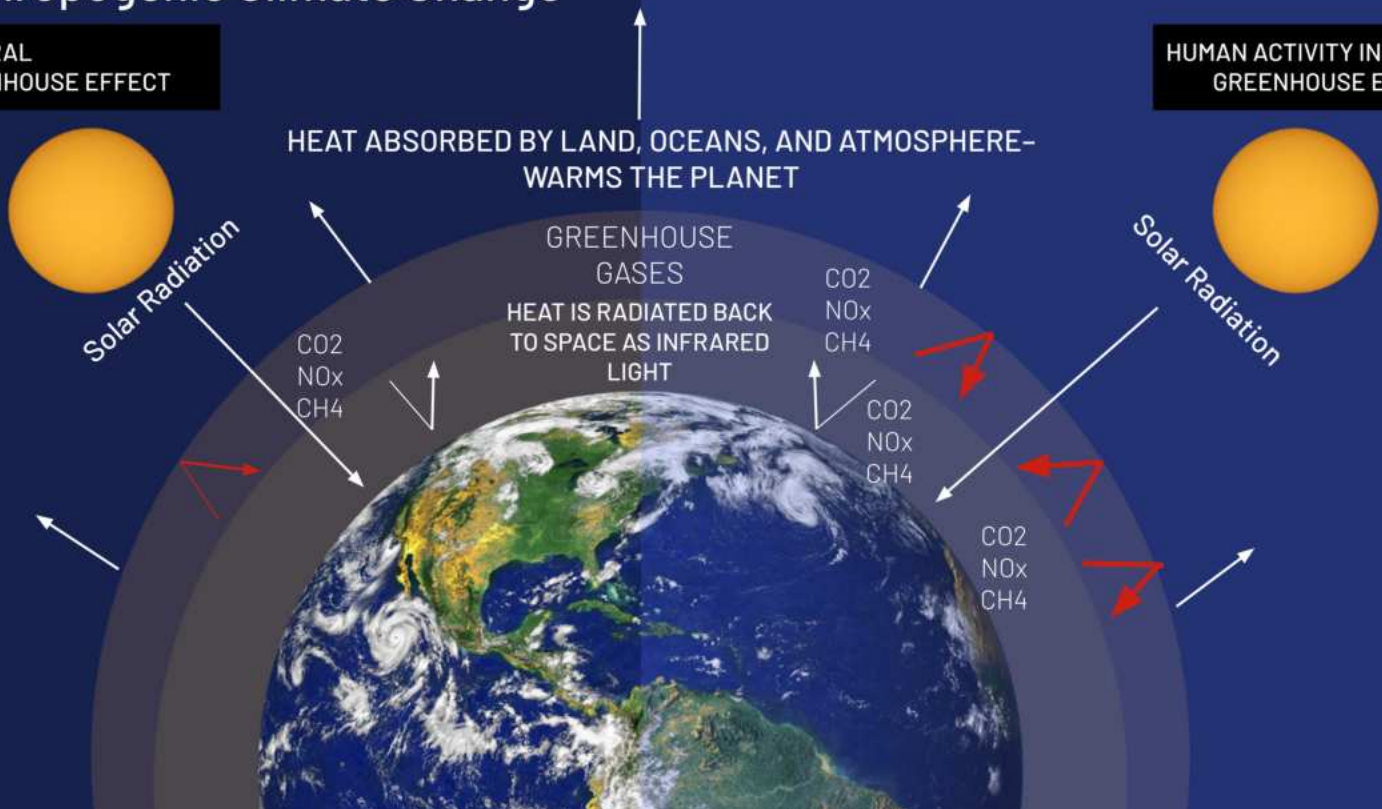
We know that the increase of global temperatures is a result of human activity for a variety of reasons. The first is that GHGs released from the burning of fossil fuels bear an isotopic fingerprint not present in GHGs from natural sources. Secondly, there is a strong positive correlation between GHG emissions and the rise in temperatures. Finally, other sources of carbon emissions such as plant respiration and decomposition, ocean release of GHGs, volcanos and forest fires have been extraordinarily low compared to anthropogenic emissions.

The Science of Climate Change

Anthropogenic Climate Change

NATURAL
GREENHOUSE EFFECT

HUMAN ACTIVITY INDUCED
GREENHOUSE EFFECT



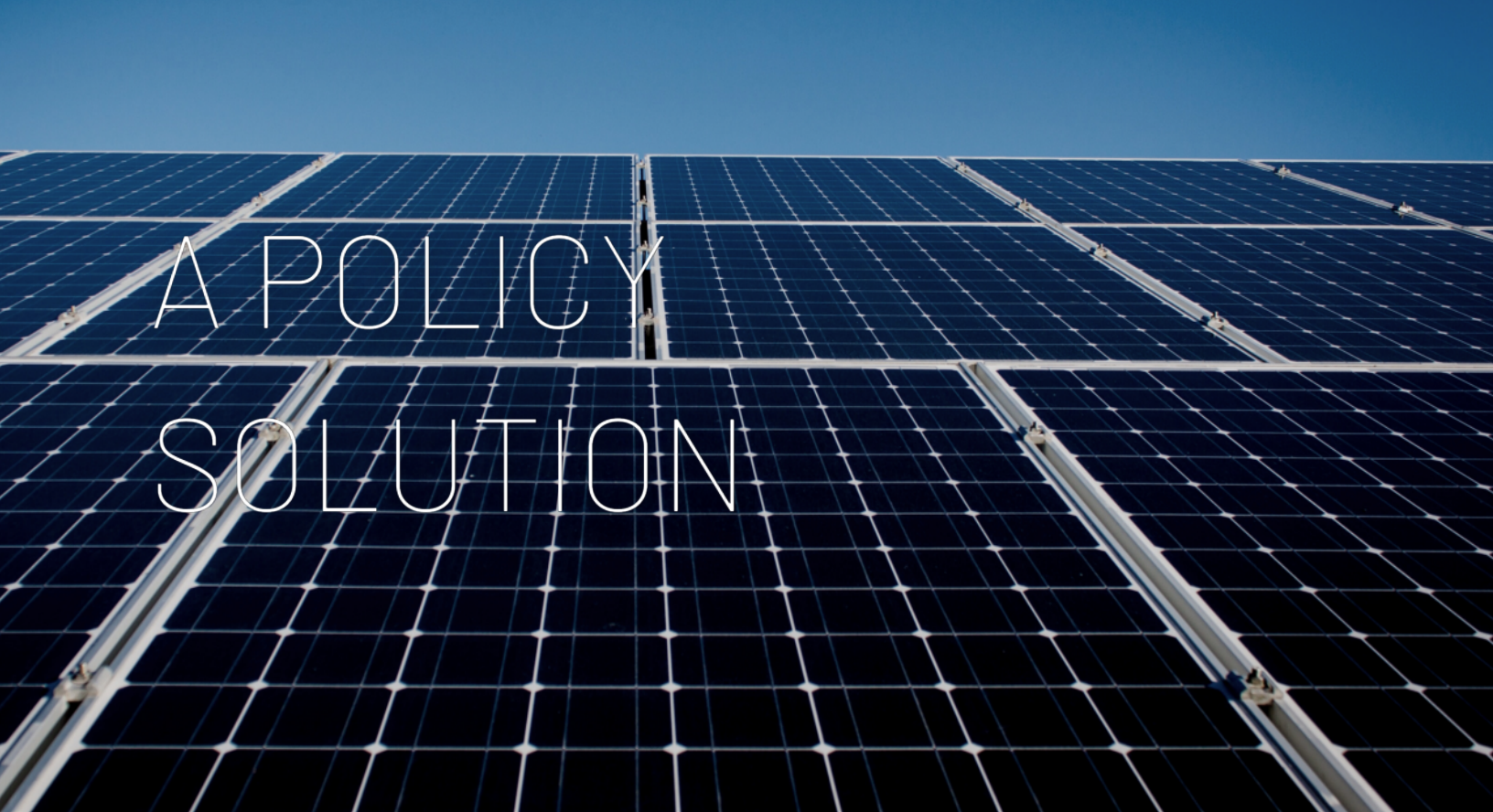


A THREAT TO AMERICAN SECURITY & INDEPENDENCE

Reducing reliance on foreign nations to ensure the America's energy security has been deemed more important than ever due to increasing global political instabilities. Greater energy self-sufficiency will insulate the United States against major supply chain distribution issues. It will also protect against potentially volatile fluctuations in crude oil and gas prices due to political unrest in major oil supplying states or economic forces outside U.S. control.

Russia's invasion of Ukraine has brought to light further risks to international energy security. Although the U.S. is not directly dependent on Russia for gas imports, there is an indirect relationship between the two through other nations which are reliant on Russia for their fuel. The reliance of U.S. on these countries may result in supply chain volatilities triggered from global issues. In order to mitigate these potential liabilities, U.S. energy independence is necessary.

A clean energy transition has potential to increase American reliance on foreign nations, as 80% of solar photovoltaic (PV) modules since 2018 were imported, and the U.S. spent \$4.6B in 2020 alone on wind turbine components. Increased renewable energy generation will also require significant increases in power storage, and the mining and refining of energy transition minerals which are geographically concentrated, and typically not in the United States.



A POLICY SOLUTION

S.4013 Energy Security & Independence Act of 2022

The Energy Security and Independence Act of 2022 was first introduced to Congress by Senator Bernie Sanders on behalf of Senators Alex Padilla, Cory Booker, Elizabeth Warren, Ed Markey, Chris Murphy and Jeff Merkley on April 6th, 2022. The bill aims to establish a viable renewable energy manufacturing supply chain in the United States, in order to reduce the reliance on foreign states for sustainable energy sources and the production and importation of oil and natural gas. S.4013 authorizes 150 billion dollars through loans and grants to companies seeking to set up renewable energy related manufacturing processes, while prioritizing environmental justice and fair labor practices.

Goals

The Energy Security and Independence Act of 2022 advocates for strengthening and bolstering United State's energy self-reliance, while focusing on transitioning to renewable energy as a long-lasting, sustainable and equitable energy source. To do so, the bill introduces a number of goals:

Goal 1

Transform the United States domestic energy system into a

100%
renewable energy system.

Goal 2

Strengthen the entire
**domestic renewable energy
supply chain.**

Goal 3

Support **environmental
justice communities** by:

- Lowering energy costs
- Creating union jobs
- Reducing pollution

Methods

S.4013's objective is to guarantee a domestic supply of renewable energy in the U.S., and does so by two primary actions:

- Defining energy as a necessary strategic asset and access to energy as a strategic interest of the U.S.
- Reframing renewable energy manufacturing, storage and supply chains as methods to secure U.S. energy access, reducing the nation's dependence on external energy resources.

To accomplish this, the bill details a number of mandates and provisions to be executed, which include: amendment of the DPA to designate renewable energy technologies and energy efficiency systems as strategic and critical materials for national security, establishment of a Domestic Renewable Energy Industrial Base Task Force, providing financial assistance to industrial renewable energy and renewable energy supply chain projects, supporting local environmental justice communities and providing additional annual funding to the weatherization assistance program.

Did you know?

The Defence Production Act of 1950 was created to allow the federal government to rapidly mobilize production of a needed resource or technology in the interest of national security. In the past, the DPA was used in war times or emergency situations, such as during the COVID-19 pandemic.

Mandates and Provisions

\$100 Billion

Domestic Renewable
Energy Industrial Base
Development

\$30 Billion

Weatherization Assistance
Program (\$3B/year)

\$10 Billion

Public Heat Pumps

\$10 Billion

Financial Assistance for
Renewable Energy Supply
Chain Development

\$25 Million

Domestic Renewable Energy
Industrial Base Task Force

Other Provisions

Secretary of Energy Report to Congress

- Opportunities to convert fossil fuel infrastructure into renewable energy infrastructure
 - Gaps in current U.S. manufacturing supply chain for renewable energy systems and technologies
 - Benefits to U.S. energy security of on-shoring supply chain for renewable energy systems and technologies
-



SETTING THE COURSE TO A 100% RENEWABLE ENERGY FUTURE

S.4013 Program Design Overview

To meet the goals outlined in the Energy Security and Independence Act of 2022 - and implement the initiatives included in the expansive scope of S.4013 - requires a strategy that breaks the many facets of the bill into related segments organized both by intended function as well as by Federal agencies under which they will be managed.

For the first year program design, our team determined the most effective strategy would be dividing S.4013's initiatives into *Industry Focused* programs and *Community Focused* programs. This structure enabled a program design that achieved short term benefits for Americans, especially those in environmental justice communities, while establishing the foundation for the long-term goal of a transition to 100% domestic renewable energy generation and a just workforce transition. This strategy takes advantage of tangible short-term gains to build support for continued funding from Congress for long term industrial focused initiatives. This support is vital to the success of the bill as the energy transition will require a multi-decadal effort and funding beyond that outlined in the bill.

PROGRAM STRATEGY

Focus on community projects with short implementation-to-impact timelines and building a foundation for long-term renewable energy industrial base and supply chain growth.

INDUSTRY FOCUS

Public Heat Pump/Community Solar

Workforce Transition

Weatherization Assistance Program

COMMUNITY FOCUS

Domestic Renewable Energy
Industrial Base Task Force

Domestic Renewable Energy
Industrial Base Development

Renewable Energy Supply
Chain Financial Assistance



INDUSTRY FOCUSED PROGRAMS



Industry focused programs included in the implementation design of S.4013 include the establishment of a Domestic Renewable Energy Industrial Base Task Force to oversee the program and provide high-level guidance to all work streams created by the bill, a federal financial assistance program for domestic renewable energy industrial base development projects, supply chain financial assistance through block grants provided to the states and a year-end report to Congress by the Secretary of Energy outlining gaps in the current renewable energy infrastructure and opportunities for retrofitting fossil fuel infrastructure for use in the renewable energy transition.

Domestic Renewable Energy Industrial Base Task Force

Planning and Leadership

S.4013 mandates the formation of a Domestic Renewable Energy Industrial Base Task Force that will sit within the White House Office of Domestic Climate Policy. The task force is chaired by the Secretary of Energy, and composed of the Secretary of Transportation, Secretary of Labor, manufacturers, engineers, scientists and experts in the fields of equitable energy, energy democracy and transportation design. Additionally, environmental justice community leaders, representatives from labor unions and staff from the National Laboratories and other relevant Federal, State and local agencies will be included.

As outlined by the bill, the role of the task force will be to develop a manufacturing and allocation plan to facilitate funding of projects that support a 100% clean energy transition as well as to provide ongoing oversight, expert guidance and project approval and specification.

The developed plan will:

1. Establish and maintain a domestic industrial base and manufacturing capabilities for renewable energy systems and technologies.
2. Prioritize projects that enable reaching the goal of a 100% renewable energy system as quickly as possible (based on available science).
3. Prioritize distributed energy resources and storage.
4. Allocate federal renewable energy resources equitably in partnership with environmental justice communities, ensuring that no less than 40% of the funds are allocated to them.
5. Ensure that high quality jobs are created and maintained while doing all of the above.

The transition to 100% domestic renewable energy generation will require a reallocating of the workforce of massive scale, requiring careful planning to enable a just transition that protects American working families and allows for a dignified transition from fossil fuel industry jobs. This workforce transition planning will be overseen by the task force and discussed in detail later in this report.

Task Force Composition



Secretaries of
Energy, Labor and Transportation

Technical Experts

Planning Experts

Advisors in
Environmental Justice & Labor Unions

Key Task Force Milestones and Accomplishments

Task Force will be created within 180 days of enactment of S.4013

Secretary of Energy will present report on first year accomplishments to the President

Domestic Renewable Energy Industrial Base Development

Funding Renewable Energy Generation Development

Through amendment of the DPA, the Energy Security and Independence Act empowers the President to both fund and authorize industrial projects that support the domestic renewable energy industrial base and manufacturing capabilities. In coordination with the President, the task force will perform a feasibility study to identify areas of need in the domestic industrial base and establish a program to provide federal financial support through loans, grants and power purchasing agreements to incentivize rapid growth of domestic renewable energy generation.

To increase the efficiency and speed of renewable energy generation growth, priority will be given to the development of photovoltaic modules and installation of solar farms, as well as components and establishment of onshore and offshore wind facilities. This priority is due to the mature nature of these technologies as well as the competitive price of clean energy generated by wind and solar, thus creating energy savings for the American public while reducing national greenhouse gas emissions. In addition to these prioritized technologies, projects involving tidal, wave and geothermal energy are also eligible for funding under S.4013.

LPO to conduct feasibility study on key opportunities for development of renewable energy

Within 1 year of S.4013 enactment, request for proposal issued and application portal opened

President to utilize DPA to implement expedited permitting process for wind and solar farm siting

Renewable Energy Supply Chain Block Grant Program

Renewable Energy Component Supply Chain Financial Assistance

Expanding the renewable energy industrial base to levels capable of achieving 100% domestic renewable energy generation will create dramatically increased need for components of energy-efficiency and renewable energy systems. To increase the United State's energy independence and decrease reliance on foreign nations for these components, a Block Grant Program will be established to provide financial assistance to states to fund construction of new - or retrofitting of existing - manufacturing facilities and operations. The DOE Office of Manufacturing and Energy Supply Chains will oversee the Block Grant Program. MESC will outline requirements and project types eligible for state funding through the block grants, develop an application portal and approve or deny applications. A regular auditing process will be developed to ensure projects that receive funding from the States align with the requirements outlined in the application process.

Application Priority

Priority will be given to states who place a focus on funding for projects that:

1. Benefit environmental justice communities by reducing pollution and utility costs
2. Are near manufacturers of components for renewable and energy efficiency systems
3. Create domestic jobs, especially for low income and underrepresented communities and dislocated workers
4. Generate economic development or growth in distressed regions



Block grant application portal to be launched within 180 days of enactment of S.4013

Why Block Grants?

A state block grant program was chosen to increase efficiency and speed of fund distribution as well as to provide states with political leverage to promote further support for renewable energy infrastructure investment.

Benefits:

- Reduce federal administrative expenses by relying on state's knowledge of their manufacturing landscape.
- Less federal interference in state business

Cons:

- Certain states may not be driven (due to fossil fuel interests and jobs or political leaning) to allocate funds to renewable energy projects

Report on Opportunities, Gaps and Benefits

Generating Support for Future Funding

The Office of Manufacturing and Energy Supply Chains will ensure that the transition process to 100% domestic renewable energy is implemented most effectively and efficiently for the benefit of the American public. The office will commission leading research universities, the National Renewable Energy Lab and the National Energy Technology Lab to conduct a study to identify key opportunities to convert fossil fuel infrastructure to renewable energy infrastructure, significant gaps in the domestic supply chain for renewable energy and energy-efficiency systems and highlight benefits to United States energy security that may be gained by on-shoring the manufacturing of items identified as missing in American manufacturing capabilities.

This report, to be presented to Congress by the Secretary of Energy no later than one year from the enactment of the bill, will serve to guide funding decisions as well as encourage Congress to continue and even increase funding beyond the ten year scope of the bill. It will include:

- Opportunities to convert existing fossil fuel infrastructure to renewable energy infrastructure
- Gaps in the current U.S. manufacturing supply chains for renewable energy systems
- Benefits to energy security of on-shoring renewable energy supply chains
- Areas for potential manufacturing efficiency gains from use of common components across multiple renewable energy systems



Report to be
presented to
Congress no later
than 1 year from
enactment of S.4013

Behind the Scenes with Industry Focused Programs

Domestic Renewable Energy Industrial Base Task Force

Administration and Staff

A staff of seven full time employees will be hired within the DOE Office of Policy to identify and onboard Task Force members and coordinate feedback and generate year end reports

Budget

A total of \$25M is allotted for Task Force administration. The first year budget for new hires is \$6M

Domestic Renewable Energy Industrial Base Development

Administration and Staff

Seven additional full-time staff will be hired within the Loan Programs Office to coordinate federal financial assistance provided through S.4013.

Budget

A total of \$100B is allocated for the renewable industrial base development. The first year budget for new hires to administer the feasibility study and establish the financial aid program is \$15M.

Renewable Energy Supply Chain Block Grants

Administration and Staff

Eight full-time staff will be hired within MESC to manage the development of the state block grant application process and portal.

Budget

A total of \$10B is allocated for the renewable energy supply chain financial assistance. The first year budget for new hires and administration is \$1M.

Report on Opportunities, Gaps and Benefits

Administration and Staff

To manage commissioned research universities and National Labs, seven new hires will be made within MESC.

Budget

The budget for the report to Congress is \$1.4M.



COMMUNITY FOCUSED PROGRAMS



Programs with a community focus will create benefits for environmental justice communities as well as facilitate a just transition for current fossil fuel workforce. The focus of these programs is to create cost savings and health benefit on a short implementation-to-realization timeline. Programs include installation of heat pumps and community solar arrays on federal buildings, workforce development and the provision of additional funds to the Weatherization Assistance Program.

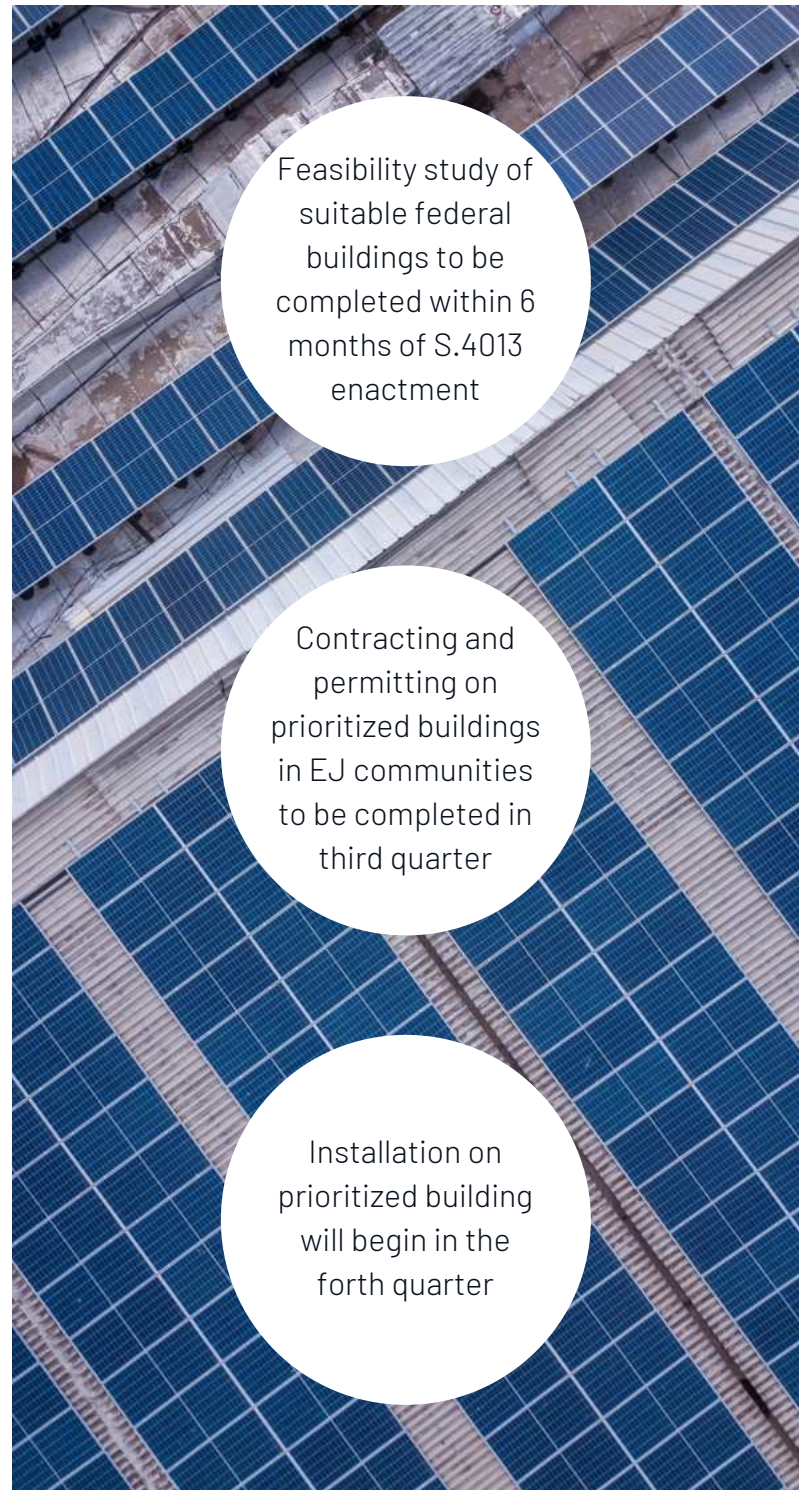
Public Heat Pump and Community Solar

Reducing Federal Emissions and Lowering Community Utility Bills

The federal government is one of the largest consumers of energy in the country, managing over 300,000 buildings. To reduce its energy consumption and related greenhouse gas emissions, S.4103 will fund energy efficiency improvements in federally owned buildings, as well as the transitioning of these buildings from fossil fuel based HVAC systems to multi-purpose heat pumps for heating, cooling and water heating. Converting to heat pumps and the resulting reduction in emissions will also lead to improved air quality in the buildings and surrounding neighborhoods.

In addition to heat pump installation, rooftop solar arrays will be sited on suitable buildings, with priority placed on federal buildings in or near environmental justice communities. Energy cost savings created by these rooftop arrays will be transferred to the surrounding communities, thus reducing their monthly energy bills.

A new Office of Energy Efficiency and Community Solar Programs (EECS) will be established within the DOE Office of Federal Energy Management Programs to coordinate with the General Services Administration in conducting a study of which buildings in the federal real estate portfolio are suitable for heat pumps and/or rooftop solar installations. EECS will oversee contracting and project management with funds being disbursed through the GSA.



Feasibility study of suitable federal buildings to be completed within 6 months of S.4013 enactment

Contracting and permitting on prioritized buildings in EJ communities to be completed in third quarter

Installation on prioritized building will begin in the fourth quarter

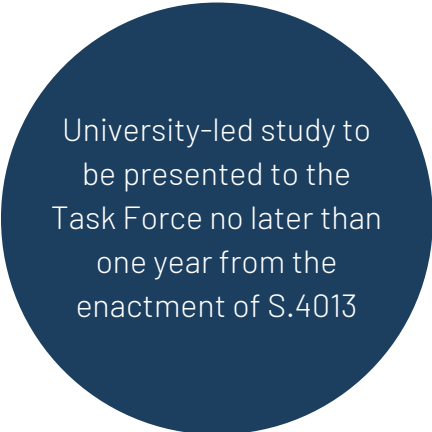
Workforce Transition

Funding a Just Workforce Transition

The transition to 100% domestic renewable energy generation will require a workforce trained in renewable technologies, manufacturing, installation, service and transmission. The transition will also result in job losses in fossil fuel energy generation and distribution. As America cannot have energy security and independence without a robust workforce and economy, a fair and equitable workforce transition is a vital aspect to the success of the S.4013.

The Office of Policy, with oversight from the Task Force, will commission research universities to conduct a study on a just workforce transition including recommendations on:

- Targeted, sector-based plans that will include convening federal agencies, regional employers, state and city governments, labor unions, training partners, and NGOs to advance up-skilling programs, skill-adjacent training, and registered apprenticeships that target communities such as the following:
 - Communities whose economies are reliant on the fossil fuel industry
 - Formerly Incarcerated Persons
 - Underrepresented Communities
 - Military Veterans
- The development of targeted talent pipelines and a renewable-energy workforce by investing in STEM-designated 9-12 and mid-career education programs.
- Creation of a fund to provide early retirement benefits for late-career fossil fuel industry workers.
- The establishment and enactment of minimum labor standards and requirements, by the SOE, that cover any laborer or mechanic employed by a covered entity, or any contractor or subcontractor in the construction of the integrated industrial base and the performance of work directly or indirectly funded or financially assisted by the program, such as the following:
 - Wages at rates not less than those prevailing for work of a similar character in the particular industry in the locality as determined by the Secretary of Labor.



University-led study to be presented to the Task Force no later than one year from the enactment of S.4013

Weatherization Assistance Program

Improved Energy Efficiency

The Weatherization & Intergovernmental Programs Office under the Office of Energy Efficiency and Renewable Energy implements the Weatherization Assistance Program that reduces energy costs for low income households by helping enable energy efficiency retrofits.

We recommend no changes to the existing program and will add on the \$30B in ten yearly installments of \$3B to expand to the program's budget.

Behind the Scenes with Community Focused Programs

Heat Pump and Community Solar

Administration and Staff

The Office of Energy Efficiency and Community Solar will be created and staffed by 250 new hires.

Budget

A total of \$10B is allocated for the installation of public heat pumps. Funds for rooftop solar will be drawn from the \$100B assigned for domestic renewable energy base development. The first year budget for this programs is \$2.89B.

Workforce Transition

Administration and Staff

Study on workforce transition to be commissioned by the Office of Policy and the process will be managed by the Task Force support staff within said office.

Budget

The first year budget for the operation of the workforce transition study is \$10M.

Key Year 1 Accomplishments

Launch of Supply
Chain Block Grant
Application Portal

Launch of Industrial
Base Development
Financial Assistance
Application Portal

Begin Installation of
Federal Building Public
Heat Pumps &
Community Solar

Workforce transition
study completed and
investments made in
recommended
educational programs

Program Calendar

FIRST 6 MONTHS

Task Force Established

Workforce Transition Study Commissioned

Opportunities, Gaps and Benefits
Study Commissioned

Block Grant Application Portal Launched

Audit of Federal Buildings for
Rooftop Solar and Heat Pump

\$3B provided to Weatherization
Assistance Program

FIRST YEAR

Renewable Energy Industrial Base
Financial Assistance Program Launched

Workforce Transition Study Completed

Opportunities, Gaps and
Benefits Study Completed

Block Grant Approval Process Begins

Rooftop Solar and Heat
Pump Installation Begins

Secretary of Energy Report to Congress

10 YEARS

Rooftop Solar and Heat Pump
Installation Completed

Continued Workforce Training
\$30B provided to Weatherization
Assistance Program

Projects Underway to Achieve 100%
Renewable Energy Transition



WHAT GETS MEASURED GETS DONE

Success Metrics and Oversight

To better understand the efficiency of the Energy Security and Independence Act, a number of quantitative and qualitative key performance indicators were identified and highlighted. These indicators touch upon the actual environmental influence of the bill's passage, its impact on environmental justice communities and its application and completion.

More broadly, the bill's success will be evaluated by a line of quantitative and qualitative indicators, which take into account two main overarching goals – the development of a domestic supply chain and the increase of domestically generated renewable energy, and the increase of investment in energy efficiency through weatherization and heat pump installation.

4 Step Performance Management System

1. Measurement

The identification of quantitative and qualitative key performance indicators (KPIs) that measures the efficacy of the program's implementation and its progress towards year-end goals.

2. Collection

The formulation of an organized data collection methodology to obtain performance-relevant information according to the KPIs identified.

3. Reporting

The outline of streamlined communication to report the results obtained based on the programs' performance measures or KPIs.

4. Feedback

The creation of feedback mechanisms whereby the designated government agencies and program actors can modify processes to drive continuous improvement of the program implementation and bolster its contributions towards short-term and long-term goals.



Measurement

Each program within S.4013 as assigned a main objective, program specific goals, and set of metrics with which to base assessment of success off of. The main objectives and goals are listed below:

Program	Main Objective	Goals
Heat Pump and Community Solar	Installation of community solar farms and heat pumps into federal buildings to benefit local communities and reduce greenhouse gas emissions.	1. To install heat pumps or solar in identified federal buildings 2. To reduce energy usage and increase solar energy capacity to benefit local communities 3. To lower greenhouse gas emissions by reducing usage of fossil fuels
Workforce Transition	To facilitate increased renewable energy sector workforce and fossil fuel workforce transition. This goal will be beneficial toward building the US domestic renewable energy supply chain while also providing support to the current energy sector workforce.	1. To invest in STEM-designated 9-12 and mid-career educational programs 2. To transition current fossil fuel workers to new industries or assist in early-retirement for late-career workers
Domestic Renewable Energy Industrial Base Development	To develop a domestic renewable energy industrial base through Federal funding to utility-scale renewable energy generation projects.	1. To establish RFP and award contracts to build industrial base 2. To domestically produce renewable energy and reduce greenhouse gas emissions via renewable energy
Renewable Energy Supply Chain Block Grants	To aid in renewable energy manufacturing development via the allocation of block grants to individual states to provide financial assistance for supply chain development for components of renewable energy systems.	1. To establish a coordination system required for the allocation of grants 2. To prioritize grant allocation to states that would benefit environmental justice communities 3. To increase the development of renewable energy manufacturing and strengthen the domestic renewable energy supply chain

Collection

The collection of data to obtain performance-relevant information for each feature previously identified is conducted by each department, agency, and organization that are responsible for the particular program under their supervision. Statistics on topics such as the level of renewable energy generation, energy efficiency, job creation, and the establishment of new energy facilities are collected by various government agencies such as the U.S. Energy Information Administration and the Environmental Protection Agency, making tracking the success of S.4013 simpler, as they only need to continue to collect this data rather than develop a new method for examining indicators. For those indicators relating to low income or environmental justice communities, surveys of the impacted communities in addition to the government data may help determine the level of the bill’s success.

Two organizations will be the main data-collection points for the rest of the program execution:

————— **Industrial Base Task Force** —————

Office of Policy
Workforce Transition

Loan Programs Office
Domestic Renewable Energy
Industrial Base Development

————— **Department of Energy** —————

Office of Manufacturing & Energy Supply Chains
Renewable Energy Supply
Chain Block Grants

Office of Federal Energy Management Programs
Public Heat Pump/Community Solar



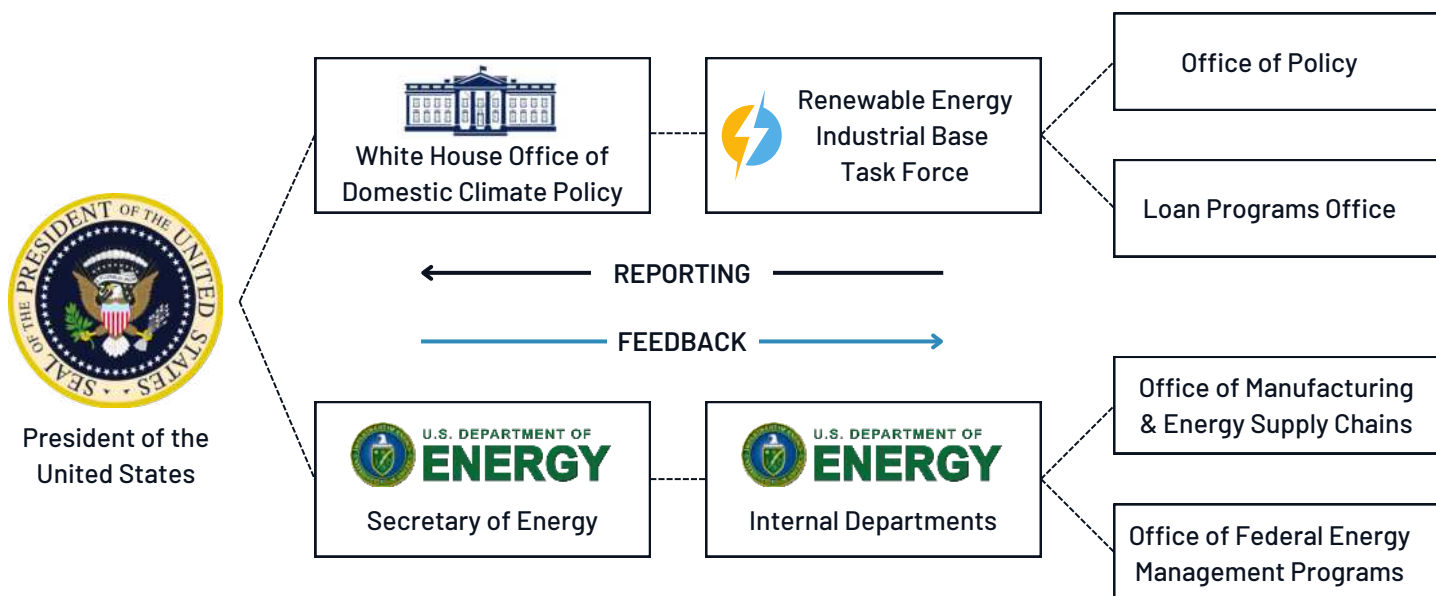
Reporting

The Domestic Renewable Energy Industrial Base Development program, will be led by the Industrial Base Task Force, who will provide their quarterly report to the White House Office of Domestic Climate Policy. The Industrial Base Task Force and the Department of Energy will create an annual report for the President overseeing the status of the entirety of the program. The yearly report will also be used to create initiatives for the future years of the program to ensure long-term success.

Under the Block Grant Program to support supply chain financial assistance, states will be required to submit an annual report to the DOE that evaluates the efficacy of their use of block grants to ensure that projects receiving funding are aligned to the way states proposed they would utilize the money in their application. This reporting will be used to determine eligibility for continued funding.

Feedback

In order to maximize the success of the program, there will be several methods by which feedback can be presented and incorporated in the structure. Following quarterly reporting from the Industrial Base Task Force, the White House Office of Domestic Climate Policy will provide their feedback as needed. Additionally, the Secretary of Energy will provide feedback on the progress of the program after receiving each quarterly report. This feedback will be given to the directors of the offices, who will be required to implement it directly or reiterate the concerns to the working teams for them to address. Finally, the President will provide feedback following receipt of the annual report on the status of the program. The President's feedback to the Secretary of Energy and Office of Domestic Climate Policy, who dictate necessary changes or updates to the program. The Secretary of Energy or Domestic Renewable Energy Industrial Base Task Force will be responsible for implementing major changes to the program.



CONCLUSION

"When it comes to the existential threat of climate change, we are in the midst of a global struggle with nothing less than the future of the planet at stake... Addressing climate change and energy dependence is not just an environmental issue, it is a matter of national security."

- Senator Bernie Sanders

The global climate crisis and the current international political climate have heightened the necessity and urgency for a comprehensive energy transition in the United States.

In response to this need, the Energy Security and Independence Act of 2022 enables the President to use their full executive authority by redefining energy as a necessary strategic asset and reframing renewable energy as vital to U.S. security and independence. Even with this authority in place, there remain significant barriers to a full renewable energy transition, barriers which require the coordination and support of Federal, State and local governments to overcome.

To facilitate this cooperation, the program for S.4013 is designed with a multifaceted yet pragmatic approach. To best utilize the \$150B allotted in the bill, efficient and targeted funding programs are outlined to be administered through both Federal and State governments. These programs will enable leaps forward for domestic renewable energy generation and supply chain growth and establish a foundation for accelerated future expansion.

Concurrent with this industry focused funding, the program design will also focus on communities – especially low-income and environmental justice communities – and will generate daily improvements in the lives of Americans, develop a workforce for the future energy economy and build grassroots support for continued environmental action.

This combined focus on community and industry is integral to promoting American energy independence and national security. Building a 100% renewable energy future will enable all Americans to live healthier, more economically secure lives.

IMAGE CREDITS

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