

Education for a Green Economy

Climate Literacy Network

<http://www.climateliteracynow.org>

The US faces two crises, both global in scale, one economic and the other ecological. Economic problems are on a scale not seen since the Great Depression and the ecological crisis, global climate change, is of a scale not known in our history. One plan of action is called for to address these twin crises: Green the economy.

To transition to a green economy, **we propose that President Obama set a national goal that 100% of all schools, both K-12 and higher education institutions, be green by 2020:** “green” in their education as well as green in their buildings and operations. To help achieve this, we propose the President establish a comprehensive **Presidential Education for a Green Economy Initiative**

The US is embarking on a major transition to a green economy, a monumental change requiring all sectors and segments of the population to pull together. Transforming our nation’s social, economic, and energy systems and protecting the environment as we move towards a green economy will require a level of expertise, innovation, and cooperative effort unseen since the end of the Great Depression and World War II to meet the challenges involved.

Meeting these challenges will require public engagement through broad education and communication. As President Obama noted in his inaugural address: “For as much as government can do and must do, it is ultimately the faith and determination of the American people upon which this nation relies.” Architects, engineers, planners, scientists, business managers, financial experts, lawyers, entrepreneurs, political leaders, resource managers, a green manufacturing workforce, and environmentally literate citizens will all be needed—to learn and teach each other in order to develop and drive the green economy. Top-down solutions alone simply will not suffice without a broad base of literate citizens to make them happen. But bottom-up, community-based solutions will need appropriate resources and guidance to inform and engage their constituents, one building, one block at a time.

For decades, polls have consistently shown broad public concern for environmental issues, but a bigger concern for the short-term condition of their pocketbooks. This position has held back environmental progress more than any other single element. The public clearly views environmental progress and protection above all else as a tradeoff with economic development when the inescapable truth is that neither can remain strong for any extended period of time if the other is weak. The sustainability of our economy depends on a healthy environment, and our environment depends on a vibrant economy. A robust green economy will substantially reduce human impacts on the environment while generating jobs based on clean energy and green products and services.

Education can – and must – help people understand the true connections, the linkages and interdependencies, between the environment, our energy sources and the economy which underpin and form the very foundation of the concept of a green economy. Only then will a broad segment of the population understand why they can’t separate their economic concerns from their

environmental concerns, or vice versa. Al Gore succinctly identified one of these key linkages in his comment: “*We’re borrowing money from China to buy oil from the Persian Gulf to burn it in ways that destroy the planet.*” How many citizens understand and fully appreciate this critical point?

Looking back at five decades of science education relating to climate in general and climate change in particular reveals that basic climate and energy science has not been well addressed in science education curricula or in national and state education standards. While clearly not everyone needs to be an expert in climatology and alternative energy in order to make informed choices, our nation’s current climate and energy awareness has room for substantial improvement. Individuals and communities need to know the basics of climate science and how our current energy use impacts climate as well as how to engage in effective personal and civic decision-making. This will require ambitious, even audacious goals, perhaps including the lofty aim of having **100% of all schools be green by 2020, in terms of both their environmental footprint, and their curriculum.**

Addressing society’s illiteracy around climate and energy issues, and how they are inherently connected, cannot be accomplished alone through piece-meal, ad-hoc efforts in schools or campaigns aimed primarily at changing people’s behavior. What is required is a high-profile, federal **Education for a Green Economy** initiative that couples energy efficiency with climate and energy education programs that will help foster climate consciousness and energy intelligence and increase related decision-making skills; resulting in an increase in our commitment, willingness, and ability to address the causes of climate change and inefficient energy use.

Very simply, what is needed is a new way of thinking and learning about integrated, systemic solutions to our economic and environmental challenges as well as our interdependent health, social and political challenges. The elements for an integrated, comprehensive effort will build on the key insights and concepts inherent in educational programs in Earth Systems Science, Climate Change, Coastal & Marine Science, Conservation, Economics, Energy, Environmental Science, Environmental Justice & Cultural Diversity, Service Learning and Community Education, Emergency Preparedness and Sustainability. *Climate Literacy: The Essential Principles of Climate Sciences* (www.climateliteracynow.org or climatescience.gov) incorporates these key insights and concepts, providing an authoritative, comprehensive climate science framework for educators and communicators. Above all, this effort should make the green economy the focal point for understanding the deep connections between economics, energy, the environment, and social well being, often referred to as “sustainability”.

To produce such a literate workforce and citizenry, The United States will need to **make major new investments in our educational systems.** While investing in green technology is important, investing also in the *human* capital to implement the green economy will keep new green jobs from migrating out of the United States. Each year, higher education sends over 3 million graduates out into the workforce armed with the attitudes, skills, and knowledge to advance either a green economy, or business as usual. The impact, good or bad, of each of these 3 million individuals lasts a lifetime. A robust **Education for a Green Economy** initiative will help integrate and energize the emerging climate science literacy efforts of the federal Climate Change Science Program, including key agencies such as NOAA, NSF, EPA, and NASA and leverage

existing energy education programs, such as those from the DOE National Renewable Energy Laboratories, to address these new national priorities on climate change and energy.

An investment in education and innovation - in human capital - is without a doubt the best investment that can be made in long-term, across-the-board economic growth. Public investment in **Education for A Green Economy** will more than pay for itself, just as the post-Sputnik education programs did in the 1950s and '60s and the GI Bill did in the '40s. According to the Subcommittee on Education and Health of the Joint Economic Committee, every dollar invested in the GI Bill generated \$6.90 in returns, and the total added value to national economic output was estimated to be nearly \$200 billion.

Education for a Green Economy is a unifying national topic:

A serious commitment to global competitiveness and innovation appeals to a wide range of stakeholders. These stakeholders include

- Americans concerned with security and energy independence issues, economic development, climate change, the environment, and our educational system
- Blue-collar workers and citizens calling for increasing investment in new 'green jobs
- Parents, students, and teachers concerned with the future both in terms of the environment and jobs
- Clean technology and green venture capital firms
- The academic community.

With this understanding recent legislation authorizing investments to support sustainability programs in higher education, improve education in STEM (Science, Technology, Engineering, and Mathematics) fields, and build healthy, high performance "green schools" (both K-12 and higher education) have passed with bipartisan support. However, they have yet to be fully funded. Most importantly, such investments will also help to further many related goals such as improving STEM education, rebuilding America's schools, improving the climate and environmental literacy of citizens.

To prepare Americans for the transition to a green economy, new investments are needed:

- to **retool our nation's universities and colleges** as centers of research, education and workforce training in green economy-related fields,
- to **restructure K-12 education** by bolstering environmental education and STEM education to provide students with a basic understanding of the relationships between environmental, economic, and social systems,
- to **bolster existing school-to-work programs** to provide disconnected young people with educational and work options through new initiatives like a Clean Energy or Climate Conservation Corps,
- to **provide more opportunities for under-served audiences** to take part in high-quality environmental education programming, and
- to mount **major public education programs** to inform the public and to develop educated consumers.

In sum, better understanding of what a green economy is by all members of society will lead to a stronger economy and increased global competitiveness, while decreasing emissions and impacts. These investments are imperative in order to unleash the creativity within our existing

schools and prepare the workers of tomorrow for new green jobs and careers that do not exist today.

National Goal: 100% of All Schools to be Green by 2020

To transition to a green economy, we propose that President Obama set a **national goal that 100% of all schools, both K-12 and higher education institutions, be green by 2020:** “green” in their education as well as green in their buildings and operations. To help achieve this, we propose the President establish a comprehensive Presidential **Education for a Green Economy** Initiative. This initiative would equip our American workforce and public with the necessary skills and knowledge for the new green economy through major adjustments to efforts in K-12 education, school-to-work programs, higher education, professional re-education, and consumer and public education. This initiative would include:

1. A Federal Education and Resource Agencies Directive on “Education for a Green Economy”

Direct all federal science and resources agencies to coordinate their programs in support of the green schools initiative; develop and conduct training for all personnel to familiarize them with challenges, needs, and appropriate responses for each agency to the transition to a green economy; and identify and support specific needs for efficient and effective professional training and capacity building.

2. A Series of White House Conferences on the Role of Education in Creating Healthier, Greener Communities and Economies

Launch a White House initiative focused on the role of education in creating green economies and communities that promote ecological integrity, social equity, economic well being, and health. Conference themes, co-sponsored with key federal agencies, would focus on building a more equitable and green economy, support service learning to engage youth in greening their communities, connect kids to nature to improve the wellbeing and preparedness of American youth and future leaders, and promote social equity to create more sustainable communities. As part of this initiative, each Conference, which will include regional nodes through videoconferencing, would facilitate collaboration across sectors and focus on how to eliminate barriers, support research, and promote innovative and sustainable solutions.

3. Create a Climate and Energy Education and Communication Center and/or Cooperative Institute

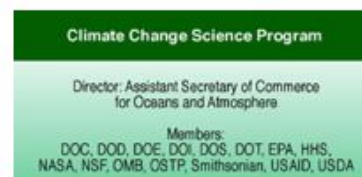
In support of the National Climate Service or an Interagency Climate Program, establish a national climate education coordinating body in the form of either a National Climate Education Center or an interagency-funded Cooperative Institute. The Center/Cooperative Institute would be responsible for 1) developing and coordinating integrated scientifically up-to-date educational resources and support networks that will connect educational institutions; 2) efforts to increase climate science literacy with organizations already in existence (e.g. American Solar Energy Association, 4H and Garden Clubs, the Children and Nature Network and the US Green Building Conference.); 3) establish comprehensive professional development programs for the nations

educators; 4) coordinate research to identify misconceptions and strategies to effectively improve literacy, and 5) improve societal literacy around climate science, energy consumption and related topics. Additionally, the Center/Cooperative Institute, in partnership with relevant federal agencies, should develop mechanisms and tools for gauging the effectiveness of programs and activities in reaching desired outcomes to guide refinement of programs and products developed through interagency investments.

4. Work with Congress to Fund this Initiative by Directing Funds of Carbon Cap and Trade Revenues to Education

Much of this initiative can and should be funded through stimulus spending programs. But it will also require a dedicated revenue stream over a period of 10 years. Should the federal government decide to auction carbon permits to address climate change, we propose that a cap and trade bill dedicate a percentage of these revenues to fund pending related legislation, as well as existing programs which focus on improving the understanding of the fundamental dynamics of a green economy, such as the University Sustainability Program, the National Environmental Education Act, and the No Child Left Inside Act (should this bill pass in 2009).

Proposed Org Chart for Education for a Green Economy



Using Essential Principles of Climate Literacy as a starting point, offer "train the trainer" programs for all Climate Change Science Program participants and partners.

Rooted in current, accurate science, maximize existing inreach, outreach, extension services, identifying best practices in education, outreach, training and communications.

And make sure other key federal partners are at the table, too



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