Learning from State Action on Climate Change

November 2005 Update

While U.S. federal policy on climate change has not been forthcoming, states have taken the lead on developing climate policies and initiatives. States are setting targets for reducing emissions, increasing the efficiency of energy systems, and encouraging investment in renewable energy. State governments cite a variety of reasons for action, including promoting economic development, reducing vulnerability to fluctuating energy prices, and preventing damages to the states' resources from climate change.

In the absence of federal leadership to reduce greenhouse gas (GHG) emissions, many U.S. states and regions have begun taking actions to address the issue of climate change. States, for a variety of motives, have taken a broad range of actions that reduce greenhouse gases. While confronting the challenge of climate change will ultimately require a national and international regime, the states and regions have a valuable role to play.

States often function as "policy laboratories," developing initiatives that serve as models for federal action. This has been especially true with environmental regulation—most federal environmental laws have been based on state models. In addition, state actions can have a significant impact on emissions, because many individual states emit high levels of greenhouse gases. Texas, for example, emits more than France, while California's emissions exceed those of Brazil. State actions are also important because states have primary jurisdiction over many areas—such as electric generation, agriculture, and land use—that are critical to addressing climate change.

It is important to understand that states have limited resources to devote to the climate issue, and their strict budget requirements can put long-term climate policies in jeopardy. States also lack certain powers that would be crucial to a comprehensive climate change policy, such as the authority to enter into international agreements. Finally, when states take individual approaches to an issue, a "patchwork quilt" of policies can result across the nation. This patchwork of policies may be inefficient for complying businesses and may result in some

states duplicating the work done in other states. While some states are delivering real reductions of GHG emissions, only in a few cases are the reduction targets commensurate with what will be needed on a global scale.

Ultimately, climate change is a global problem that will demand global action, including national action in the United States. State and regional action cannot substitute for a coordinated national response, but it can help provide the foundation for that response.

Motivation for Action

States that enact climate change policy almost always do so with long-term economic well being in mind. Many states are concerned with the toll climate change is projected to take on their economies, many of which are closely tied to their natural resources. Coastal states consider the impact of rising sea levels, agricultural states worry about lost productivity, and the dry Western states are alarmed by the prospect of worsening droughts. Many states, however, are looking at policies that address climate change as economic opportunities: to produce and sell alternative fuels, to become renewable energy exporters, to attract high-tech business, or to sell carbon emission reduction credits. Some states will be better able to take advantage of these opportunities than others, and many are concerned about the economic impacts of climate policy.

But economic development is just one motivator. In fact, multiple drivers lead to state policies that address climate change. Efforts to improve air quality, lessen traffic congestion, secure energy supply and reliability, or even to reduce odors from livestock feedlots often indirectly result in GHG reductions. Likewise policies designed explicitly to reduce GHG emissions often bring about benefits in these other areas.

In part because reducing GHG emissions can deliver multiple benefits, it has often been possible to build broad coalitions around GHG reduction policies. Climate change has, in fact, often been a bipartisan issue in the states, with Democratic, Republican, and Independent governors signing climate change legislation. Even when governorships have changed hands, policies have remained in place. Policymakers at the national level may be able to learn from the states how to find common ground on this issue.

Regional Initiatives

Regional programs can be more efficient than programs at the state level, as they encompass a broader geographic area, eliminate duplication of work, and create more uniform regulatory environments. Regional initiatives across the U.S. are addressing climate change and clean energy (see Figure 1).

Nine Northeastern and Mid-Atlantic states are working together to develop a cap-and-trade system for carbon dioxide (CO_2) emissions from member-state power plants called the Regional Greenhouse Gas Initiative (RGGI). To facilitate compliance with reduction targets, RGGI will provide flexibility mechanisms that include credits for emissions reductions achieved outside of the electricity sector. Governors of the participating states expect to come to agreement on the program's design by the end of 2005. The successful implementation of the RGGI cap-and-trade scheme will set the stage for other states to join or form their own regional initiatives and may encourage the program to expand to other greenhouse gases and other sectors. RGGI states, along with Pennsylvania, are also developing a GHG registry called the Regional Greenhouse Gas Registry (RGGR).

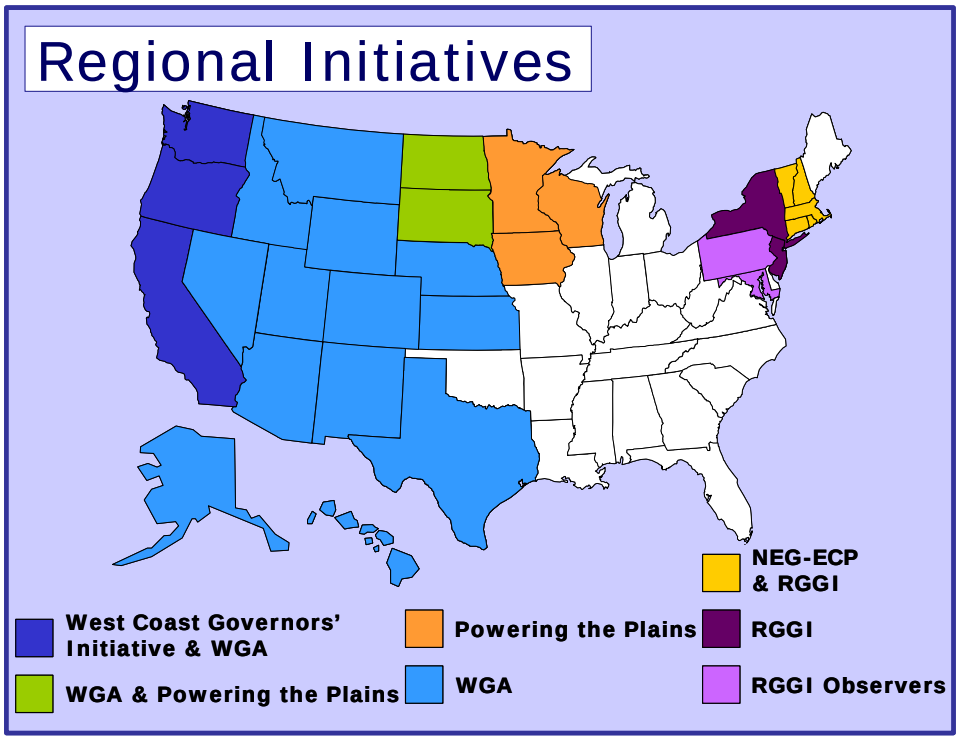

Figure 1

The Western Governors' Association (WGA) Clean and Diversified Energy Initiative, including 18 western states, has begun investigating strategies to increase efficiency and

renewable energy sources in their electricity systems. To meet its goals, the Initiative's advisory committee (CDEAC) appointed eight technical task forces to develop recommendations based on reviews of specific clean energy and efficiency options. The CDEAC will make final recommendations to the Western Governors' Association by mid-2006. Additionally, the WGA and the California Energy Commission are creating the Western Renewable Energy Generation Information System (WREGIS). WREGIS is a voluntary system for renewable energy credits that tracks renewable energy credits (RECs) across 11 western states in order to facilitate trading to meet renewable energy portfolio standards.

The West Coast states—Washington, Oregon, and California—are cooperating on a strategy to reduce GHG emissions, known as the West Coast Governors' Global Warming Initiative. In 2001 six New England states committed to the New England Governors and Eastern Canadian Premiers (NEG-ECP) climate action plan, including short- and long-term GHG emission reduction goals. Powering the Plains, launched in 2002, is a regional effort involving participants from the Dakotas, Minnesota, Iowa, Wisconsin and the Canadian Province of Manitoba. This initiative aims to develop strategies, policies, and demonstration projects for alternative energy sources and technology and climate-friendly agricultural development.

Low-Carbon Electricity Policies

The generation of electricity accounts for 30 percent of all GHG emissions in the United States. States have considerable authority over the production of electricity within their borders, and many options are available to them to promote low-carbon energy production.

Twenty-one states and the District of Columbia have mandated that electric utilities generate a specified amount of electricity from renewable sources (see Figure 2). Most of these requirements take the form of "renewable portfolio standards," or RPSs, which require a certain percentage or amount of a utility's power plant capacity or generation to come from renewable sources by a given date. The standards range from modest to ambitious, and definitions of renewable energy vary. While the use of renewable energy does deliver significant GHG reductions, climate change may not be the prime motivation behind some of these standards. Other advantages include job creation potential, energy security, and improved air quality.

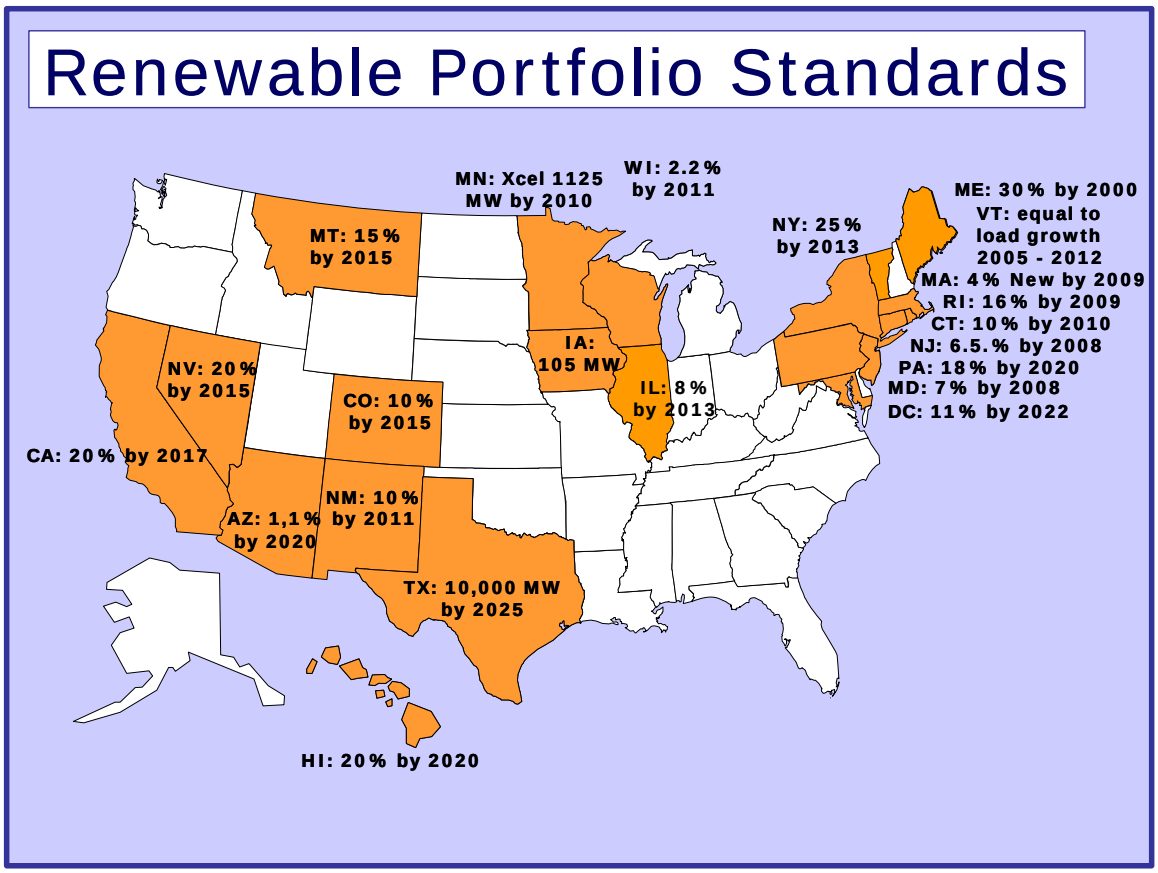

Figure 2

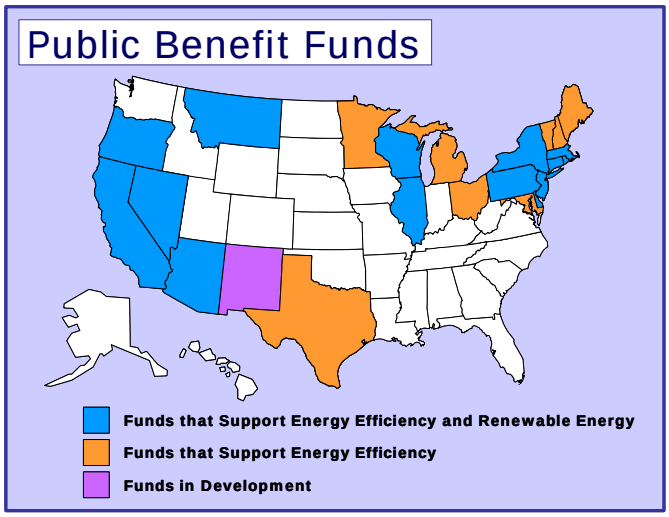

Figure 3

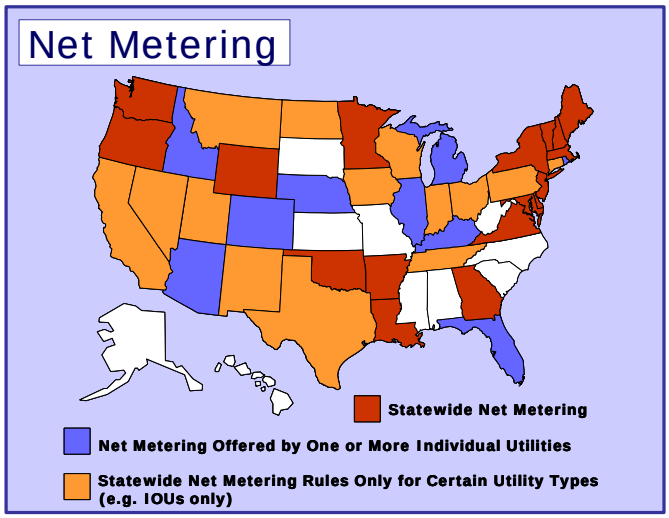

Figure 4

Almost half of all states have funds, often called “public benefit funds,” dedicated to supporting energy efficiency and renewable energy projects (see Figure 3). The funds are collected either through a small charge on the bill of every electric customer or through specified contributions from utilities. The charge ensures that money is available to fund these projects. Publicly managed clean energy funds from twelve of these states have formed the Clean Energy States Alliance to coordinate public benefit fund investments in renewable energy.

Forty-one states have at least one utility that permits customers to sell electricity back to the grid; referred to as net metering. Eighteen of these states offer net metering state-wide (see Figure 4). Thirty-six states have utilities which offer green pricing, allowing customers the option of paying a premium on their electric bills to have a portion of their power provided from designated renewable sources. Five of these states—Washington, New Mexico, Montana, Minnesota, Iowa and New Jersey—have made green pricing options mandatory for electricity generators (see Figure 5).

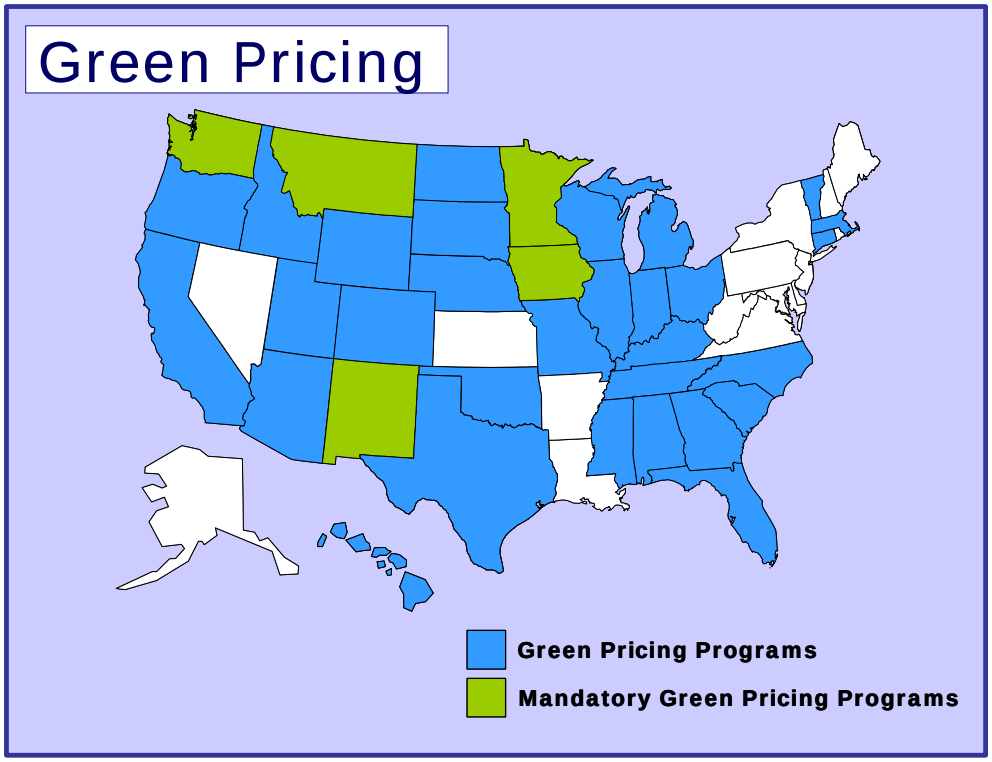

Figure 5

Both Washington and Oregon require that new power plants offset a certain portion of their anticipated CO_2 emissions, by either undertaking emission reduction or mitigation projects themselves, or by paying a specified fee to a designated organization that will then select and fund offset projects. Massachusetts and New Hampshire have gone even further by requiring CO_2 emissions reductions from existing power plants.

Many states provide incentives for the development of technologies that make carbon capture easier, such as IGCC (integrated gasification combined cycle), and some are also investigating the potential to store carbon in geologic formations within their borders. West Virginia and Ohio, two major coal producers, are supporting a pilot project to sequester carbon in a deep underground rock formation on the border between the two states. The

ability to capture and store carbon would facilitate the continued use of coal, a vital economic resource in many states.

Moreover, the federal government has established minimum efficiency standards for approximately 20 kinds of residential and commercial products, including washers and dryers, refrigerators and freezers, dishwashers, and air conditioners. Maryland, Connecticut, California, and New Jersey have set standards on products not covered by federal standards.

Transportation policies

Transportation accounts for 27 percent of all GHG emissions in the United States; therefore, any successful strategy to address climate change must include the transportation sector. States have many options to address GHG emissions from transportation.

California has adopted a requirement to reduce GHG emissions from new light-duty vehicles; this requirement is pending a legal challenge from the automobile industry. If upheld by the courts, California estimates that its standard will reduce annual greenhouse gas emissions by 30 million tons of CO_2 equivalent by 2020, and the potential for reductions is higher if additional states adopt California's standards. California has unique authority among states to set vehicle emissions standards, because of a special provision in the federal Clean Air Act. Other states have the option of either following federal standards or adopting California's. Ten states have announced their intention to follow California's vehicle standards: New York, Maine, New Jersey, Vermont, Massachusetts, Oregon, Washington, Rhode Island, Connecticut and Pennsylvania.

Numerous states have policies requiring that a certain percentage of state-owned vehicles run on alternative fuels, such as ethanol or natural gas, or that the state fleet meet a fuel efficiency standard. Some states offer tax breaks for alternative fuels, gasoline/ethanol blends, alternative fuel vehicles, low-emission vehicles, or for converting traditional vehicles to run on alternative fuels.

Agricultural Policies

Agriculture contributes approximately 7 percent of total U.S. GHG emissions, with nitrous oxide (N_2O) accounting for two-thirds and methane (CH_4) for one-third of agricultural emissions. In addition to reducing these emissions, there are opportunities in agriculture to offset emissions from other sectors by sequestering greenhouse gases in biomass. In doing so, farmers may be able to tap additional revenue sources.

Biomass, as a low-carbon energy source, provides an opportunity for the agricultural sector to address climate change in a profitable way. For example, Iowa has pilot programs to improve production of switch grass to co-fire with coal in power plants.

Soil conservation techniques increase the amount of carbon stored in soil while improving soil quality. Compared to conventional tilling techniques, soil conservation techniques such as "no till" reduce fuel use, time, and cost of farmland preparation. Nebraska, Oklahoma, Wyoming, North Dakota, and Illinois have formed carbon sequestration advisory committees to investigate the potential for in-state agricultural carbon sequestration.

Emissions Targets and Climate Action Plans

Comprehensive climate plans combined with enforceable GHG emissions targets provide the highest certainty of significant emissions reductions. Twenty-eight states have climate action plans; nine have state-wide emission targets (see Figure 6). The states of California and New Mexico have committed most recently to emissions reductions targets, joining New Jersey, Maine, Massachusetts, Connecticut, New York, Washington and Oregon.

In a 2005 executive order, California Governor Arnold Schwarzenegger committed to GHG reduction targets equivalent to reaching 2000 emissions levels by 2010, 1990 levels by 2020, and 80% below current levels by 2050. Governor Bill Richardson of New Mexico also signed a 2005 executive order to set GHG targets at achieving 2000 emissions levels by 2012, 10% below 2000 levels by 2020, and 75% below 2000 levels by 2050. These goals supplement both California's and New Mexico's existing climate-friendly policies including renewable portfolio standards, renewable energy tax credits, and energy efficiency goals. New Mexico is the first major coal, oil, and gas-producing state to set targets for cutting GHG emissions.

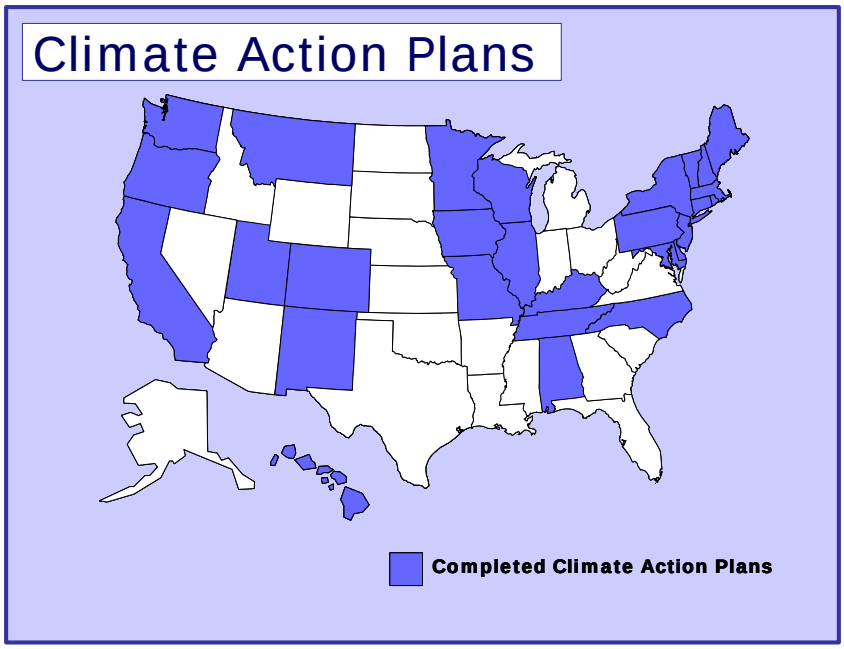

Figure 6

The process of developing a climate action plan can identify cost-effective opportunities to reduce GHG emissions that are relevant to the state. The individual characteristics of each state's economy, resource base, and political structure provide different opportunities for dealing with climate change. However, without strong incentives, climate action plans will not achieve real reductions in GHG emissions. A number of states are working to develop climate actions plans. For example, North Carolina recently established a Legislative Commission on Global Climate Change to address the threats posed by global warming and determine the costs and benefits of the various mitigation strategies adopted by state and national governments, as well as to assess the state's potential economic opportunities in emerging carbon markets. In response to Governor Janet Napolitano's 2005 executive order, Arizona is also developing a climate action plan.

Conclusion

While most state climate change efforts have been implemented relatively recently, some lessons are already emerging for future state, regional and federal efforts. State programs such as emissions reporting and cap-and-trade systems should be designed so that they can easily be expanded or integrated into other programs. Design foresight and flexibility will help facilitate future policies at the state, regional, and federal level. Although garnering support for mandatory goals is sometimes difficult, these policies are generally more effective at achieving significant reductions than voluntary measures. States considering their options to

effectively deal with climate change may consider beginning or joining a regional initiative in order to reduce climate impacts more efficiently while avoiding a regulatory patchwork and helping businesses more easily adapt to new policies.

As states move forward, they should be guided by a specific long-term emissions goal and a commitment to minimizing costs to achieve that goal. States may want to move toward a comprehensive approach incrementally, focusing first on policies that are relatively easy to implement and yield multiple benefits.

The actions undertaken by states to reduce GHG emissions are a collective first step on the United States' path to confronting climate change. The policy and technology lessons taken from these efforts should do much to inform future efforts at the national and international levels.

The Pew Center on Global Climate Change is a non-profit, non-partisan, independent organization dedicated to providing credible information, straight answers, and innovative solutions in the effort to address global climate change.

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