

# Clean Energy and Climate Change Strategy



## Environmental Challenges, Goals and Objectives

# Table of Contents

Clean Energy and Climate Change Strategy .....	1
Clean Energy and Climate Change Strategy Goals .....	6
CECC Strategic Objectives .....	9
Appendix - Employee Suggestions and Future Ideas .....	A1
List of Acronyms and Abbreviations .....	A9



commercial



industrial



residential



transportation



electrical

Our employees work hard everyday to carry out the Agency's mission of protecting our nation's environment and natural resources. With the plans and goals presented in the Clean Energy and Climate Change Strategy, they demonstrate the wide range of competencies required to meet this complex challenge.

This employee-driven initiative incorporates a wide range of ideas and best practices, from the everyday to the more ambitious. With sound, pragmatic strategies like these, we are determined to meet the challenges presented by our changing climate and energy needs. I am proud to support our employees as they strengthen their role as environmental stewards, protecting our environment for this generation and for many to come.



Richard E. Greene  
Regional Administrator, Region 6



(top to bottom)  
crude oil refinery;  
vehicle congestion;  
sea wall erosion protection (courtesy U.S.C.G.);  
urban flooding

# Clean Energy & Climate Change Strategy

## Introduction

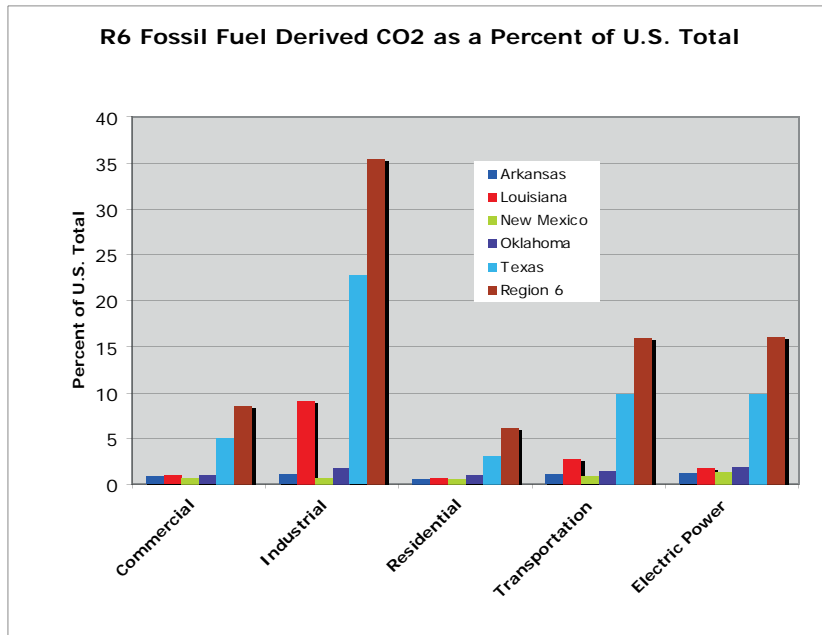
Of the environmental challenges facing the United States, none are potentially more important than climate change and ensuring the availability of clean energy sources. EPA Region 6 is committed to meet these challenges and position itself as a leader in addressing climate change factors. As Congress works to address legislation that may form the backbone of a future regulatory structure, we will work to lay the groundwork for that effort and use our position as a regional environmental leader to promote innovative approaches to clean energy and greenhouse gas (GHG) emission reductions. We will use the following methods:



Industrial Coal-fired Power Plant

- Implement internal changes (Lead by Example)
- Enhance programs and policies and expand partnerships (Implement via Programs, Policies & Partnerships)
- Conduct aggressive outreach and education to stakeholders (Conduct Outreach/Education)
- Assess new technologies and more effective ways of employing them with partners (Federal, State, Local, and Tribal Collaborations)

Region 6 is especially well situated to advance energy and climate objectives as our five States and 65 Tribal governments are big stakeholders in this process.



The States in Region 6 generate over 35% of the nation's fossil fuel derived Carbon Dioxide (CO<sub>2</sub>) from industrial sources. Our States also generate over 15% of the nation's fossil fuel derived CO<sub>2</sub> from both transportation and electric power sources.<sup>1</sup> This situation presents many opportunities to assist our stakeholders in making a difference in the nation's attempt to curb climate change. The Region 6 Clean Energy and Climate Change (CECC) strategy gives the Region a blueprint to begin to make that difference over the next six months and beyond.

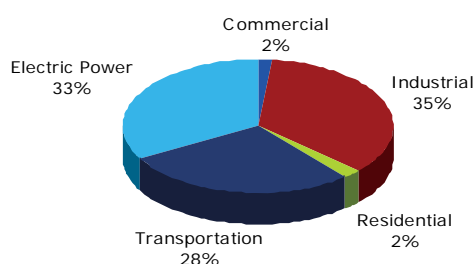
<sup>1</sup> Data is compiled from "State CO<sub>2</sub> Emissions from fossil fuel combustion, 1990-2004," which can be found at [http://www.epa.gov/climatechange/emissions/state\\_energyco2inv.html](http://www.epa.gov/climatechange/emissions/state_energyco2inv.html)

The EPA Region 6 CECC strategy prioritizes these crucial activities across the following, action-oriented categories:

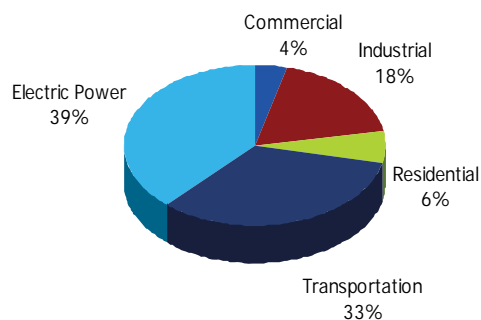
- Reduce Greenhouse Gases (GHG)
- Conserve energy and resources
- Adapt to Climate Change Impacts
- Promote Clean/Renewable Energy Sources

In constructing our CECC strategy, we were mindful of the percentage contribution to CO<sub>2</sub> from the various source sectors within Region 6.<sup>2</sup>

**R6 2004 Fossil Fuel Combustion  
Derived CO<sub>2</sub>**



**U.S. 2004 Fossil Fuel Combustion  
Derived CO<sub>2</sub>**

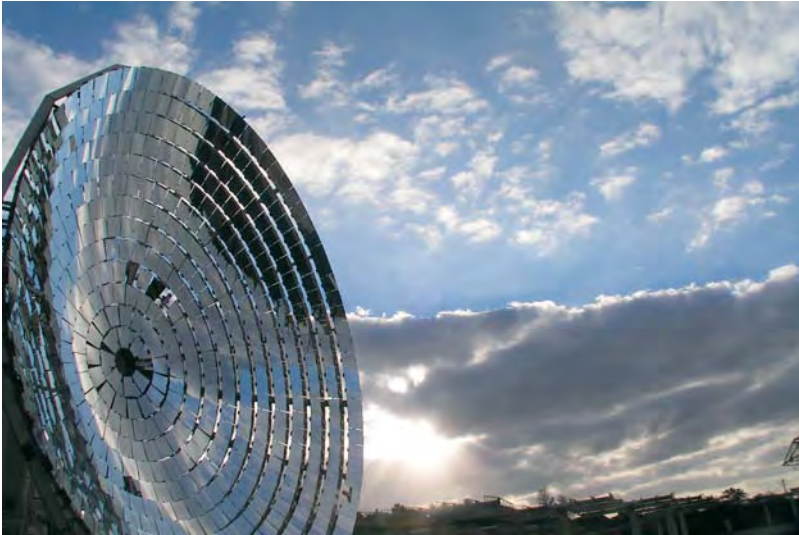


Much of our States' fossil fuel derived CO<sub>2</sub> comes from industrial sources – almost twice the national percentage. Much of this is due to the heavily industrialized gulf coast region of Texas and Louisiana. These factors make climate change an especially urgent issue for Region 6.

Region 6 is uniquely positioned to develop and promote renewable forms of energy such as wind and solar power because our States have tremendous renewable energy potential. In fact, Texas generates more electricity from wind than any other State. Additionally, in contrast to some other western States with high renewable energy potentials, much of our region (principally Texas) has the existing electrical infrastructure and population density such that market driven renewable energy solutions are more likely to occur in the near term.

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<sup>2</sup> Ibid



Concentrated Solar Collector

Our strategic plan includes helping to expand markets to increase the use of properly sited clean and/or renewable energy sources, which include wind, solar, geothermal, bio-mass, and some clean coal options.

### **Organization of the CECC Strategy**

The Region 6 CECC Strategy was designed to provide more focused detail at each successive level, which allows the reader to quickly navigate to the level of detail desired. The Region 6 Clean Energy and Climate Change Strategy Goals beginning on page 6 highlight the

highest priority actions that are particularly pertinent to Region 6. The Region 6 CECC Strategic Objectives beginning on page 9 present a more detailed outline of strategic objectives that address the general “what” (e.g. reduce employee miles traveled to use less fuel) and “how” (promote use of ride sharing and flexiplace) of the strategic plan. The CECC Employee Suggestions and Future Ideas, beginning on page A 1, represent possible future CECC actions that were mined from employee suggestions and regional and national energy and climate change strategies.

### **Our CECC Goals**

EPA Region 6 efforts to conserve resources are foundational to our strategy. Our goals are to achieve significant reductions in energy use to help reduce GHG production, as well as conserve water and other natural resources. Conservation activities include a range of actions to reduce the energy consumed within our region on a daily basis. We will promote the most promising existing and new conservation initiatives. This approach includes listening to, communicating with, and transferring technology to our partners and supporting their efforts. We will focus on investigating new developments in science and technology, and determine if we can apply these practically with our partners to enhance conservation.

### **A CECC Strategy Results in Co-Benefits**

Many of the actions that can help reduce GHG emissions will help us reduce our dependence on imported fuels. Promoting the use of renewable energy, as well as more energy and water efficient technology, sows the seeds for future energy savings. Actions included in the strategy will also improve overall air quality by reducing other air pollutants, such as mercury and ozone-forming chemicals. In addition, successful implementation of this strategy will introduce more efficient ways to deal with waste and

contaminated industrial sites; promote water quality and water supplies; conserve natural resources; and reduce costs. In many cases a single program investment will reduce GHG emissions, yield multimedia environmental benefits, and lead to economic savings and greater sustainability.

### Adapting to Climate Change

EPA, States, and Tribes implementing core environmental programs will be challenged to meet air, water and wetlands protection goals, as well as waste management and clean up goals as the climate changes. Warmer air and water, changes in weather patterns, and rising sea levels will present challenges that will require modifications to programs and new tools in order to sustain past progress and avoid new risks to human health and ecosystems. Our strategic goal will include the adaptation and implementation of core environmental programs to maintain and improve their effectiveness in response to climate change, and assist States, Tribes, and other stakeholders in this effort.

### Moving Forward

Developing a CECC strategy now is good for the Region 6 economy and environment. Region 6 can capitalize on Texas' rank as first among states in solar energy potential and installed wind power capacity by developing and promoting new sources of these types of energy. In doing so, we can help address barriers to alternative energy sources and help expand markets to propagate its use.



Nuclear Power Plant

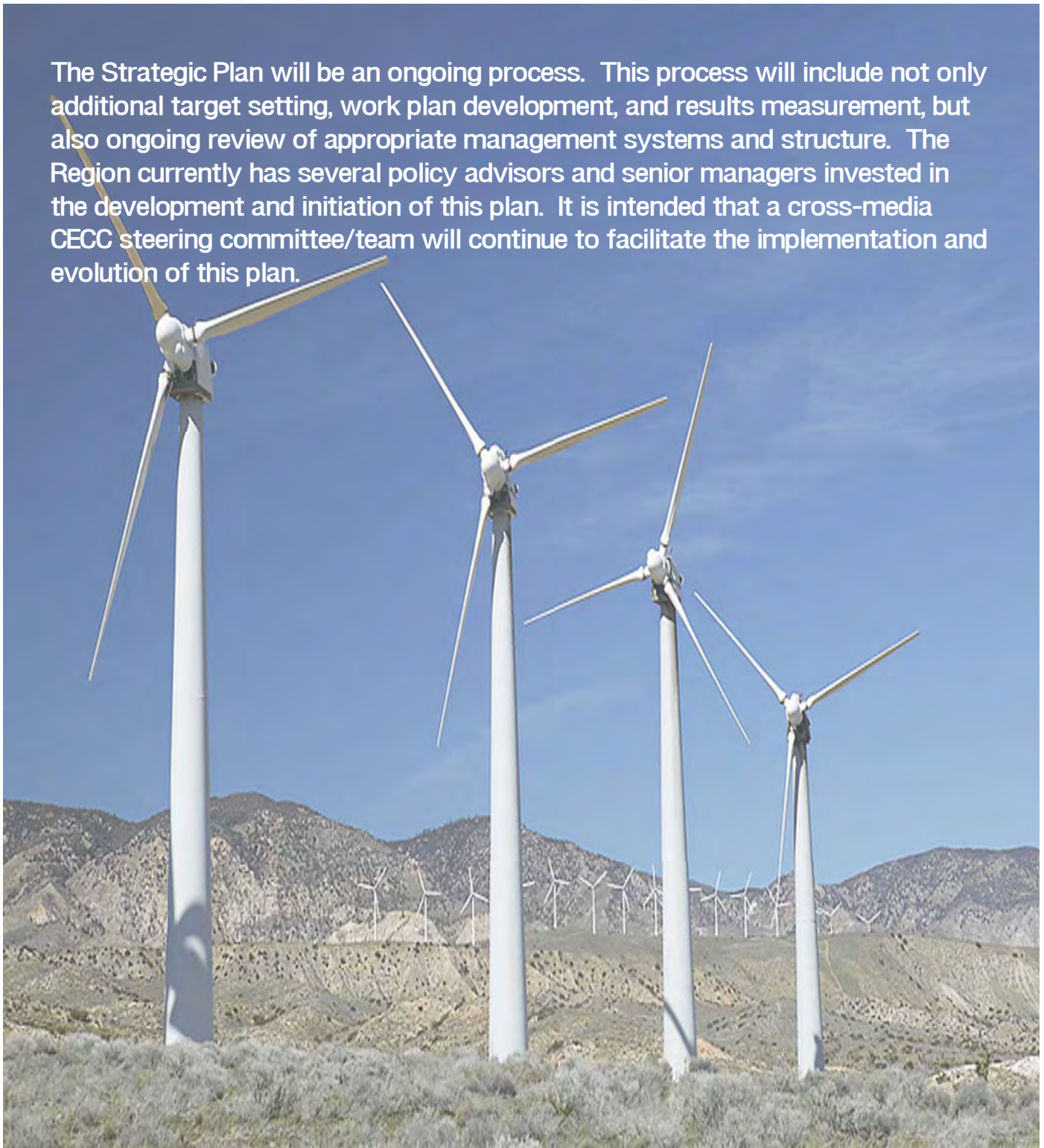
Finally, Region 6 will promote the use of properly sited clean and/or renewable energy sources, including wind, solar, geothermal, biomass, and some clean coal and nuclear power options. We can do this through our internal decisions, implementation of our regulatory programs and our interaction with external parties, which include the general public, State, Tribal, and Local governmental agencies, other federal agencies, the regulated community, and interest groups.

### Leading by Example

In order to garner credibility with our partners in these efforts, EPA Region 6 must lead by example. We already have a number of environmental stewardship accomplishments upon which we can build. Many of these are part of our Environmental Management System (EMS), which has formally been in place since 2005. These accomplishments include our use of 100% renewable sources for our electric power, a well-established transit subsidy program and good participation in carpools and vanpools, active recycling, water conservation, and alternative workplace location (aka “flexiplace”) programs. We have succeeded in reducing our use of photocopy paper by 10% each year since 2005, and we now utilize 100% post-consumer content paper. We are preferentially purchasing “green” office supplies and we strive to re-use our excess electronics and IT equipment. A key aspect of our strategy is to work to extend these initiatives to other federal agencies within Region 6.

# Clean Energy & Climate Change Strategy

The Strategic Plan will be an ongoing process. This process will include not only additional target setting, work plan development, and results measurement, but also ongoing review of appropriate management systems and structure. The Region currently has several policy advisors and senior managers invested in the development and initiation of this plan. It is intended that a cross-media CECC steering committee/team will continue to facilitate the implementation and evolution of this plan.



Windmill Turbines



# Goals

**Vision Statement:** Use EPA Region 6’s technical capability, funding mechanisms, and ability as a convener to respond to the challenges of and capitalize on the opportunities related to clean energy and climate change

## Regional Focus Area 1: Eco Challenge Network

**Goal:** Maximize utility of EPA efforts to address Clean Energy and Climate Change, including voluntary programs

**Targets:**

- Establish a multi-divisional resource network to lend assistance to states, tribes, local governmental agencies, industrial community and public at large to create and grow projects/programs to improve energy efficiency and respond to climate change
- Cross-pollinate voluntary programs in order to enhance visibility, efficiency, and implementation with common goals and objectives

## Regional Focus Area 2: Conservation and Efficiency through Region 6’s Internal Environmental Management System

**Goal:** Demonstrate exemplary environmental stewardship by capitalizing on opportunities to reduce the Region’s carbon footprint in our day-to-day operations

**Targets:**

- Implement an “Environmental Management System on steroids” program for the Dallas regional office and the Houston laboratory, including employee commute options and travel needs, energy and water efficiency & conservation, reduction of paper use, green conferencing, recycling, use of hybrid fleets and fuel economy, and green power purchasing



DART Downtown Dallas

### Regional Focus Area 3: Enhance Partnerships and Networks

Goal: Use EPA's unique status as a convener to build relationships among state/tribe/local agencies, regulated community, non profit interest groups and associations to raise awareness and induce action

#### Targets:

- Enlist new partners in existing collaborative efforts (Blue Skyways, WaterSense, Sustainable Skylines, etc.) to promote energy and water conservation and efficiency and reduction of greenhouse gas emissions
- Convene focused stakeholder sessions to advance policy and program goals related to climate change impacts (state agencies, petroleum & chemical manufacturing facilities, power generation and transmission companies, goods transport facilities)
- Work with the Dallas / Fort Worth Federal Executive Board to obtain 100% participation in vehicles per mile traveled (VMT) reduction programs and provide measurement assistance to demonstrate energy and greenhouse gases reductions

### Regional Focus Area 4: Sequestration of Greenhouse Gas Emissions

Goal: Support greenhouse gas mitigation efforts through sequestration actions wherever possible

#### Targets:

- Utilize Region 6 expertise in deep well injection technology and permitting to help inform the development of national CO<sub>2</sub> geosequestration regulations
- Identify at least one petrochemical plant, refinery, electric generating unit or other large greenhouse gas source to partner with (along with State, Tribal and Local government participation) to develop (or continue to develop) a model carbon sequestration or other greenhouse gases reduction program

### Regional Focus Area 5: Sea Level Rise/Coastal Land Loss

Goal: Adapt to effects of climate change by promoting landscape scale coastal protection



Coastal Land Loss

#### Target:

- Design and implement barrier island restoration and Mississippi River pipeline sediment delivery projects

## Regional Focus Area 6: Alternative and Renewable Energy Production & Use on Contaminated Lands

Goal: Promote the use of previously contaminated lands for alternative and renewable energy production

### Targets:

- Pilot the use of previously contaminated lands (Brownfields, Superfund, Base Realignment and Closure, Voluntary Cleanup Program, RCRA, etc.) for production/distribution of alternative and renewable fuels and energy
- Incorporate the use of renewable and alternative energy sources (wind, solar, geothermal, hydro) in the remediation option selection and implementation



Texas Roadway

# Objectives

## Current Activities

### Lead by Example

- Expand DART ridership, flexiplace, and ride sharing to reduce GHG emissions
- Conduct annual EMS awareness training for employees to minimize their carbon footprint, including "EMS at Home" training
- Enhance and implement EMS policies to minimize carbon footprint: energy and water efficiency, reduction of paper use, green conferencing, recycling, use of hybrid vehicles, fleet fuel economy, and green power purchasing
- Identify at least one annual R6 award for an R6 employee to emphasize CECC

### Implement via programs, policies and partnerships

- Review and revise policies and guidance to maximize opportunities to include CECC goals in financial assistance mechanisms, consent decrees, SIPs, documents developed/reviewed for NEPA compliance, and SEPs
- Incorporate production/use of renewable energy and CO<sub>2</sub> sequestration into the remediation of contaminated properties (e.g., Chino Mine Project)
- Continue participation in the EPA Administrator's Clean Energy-Climate workgroups and track pending climate change legislation
- Increase membership and expand CECC goals in the Performance Track program
- Expand regional participation in Headquarters-led climate change programs such as AgSTAR, Natural Gas STAR, Landfill Methane, Energy Star, Climate Leaders, Smartgrowth, Green Buildings, Climate Ready Estuaries Program, etc.
- Increase agricultural, municipal, and industrial methane capture through use of innovative Region 6 GIS tools and programs such as Waste to Energy
- Expand implementation of the Resources Conservation Challenge (e.g., materials management, recycling, priority chemical reductions, etc.)
- Address CECC goals through implementation of the Dallas Sustainable Skyline Initiative and other urban centers (green taxis, green homes, heat island, storm water mitigation, and clean lawn mowers)
- Address CECC goals through the Blue Skyways Collaborative projects (energy demand reduction, diesel engine retrofits, new E85 stations, Smartway, etc.)
- Update emergency response plans to better address climate change events (i.e., storms, droughts, etc.) and ensure the process addresses tribes and vulnerable communities
- Promote CECC goals within the Border 2012 program (e.g., GHG inventory with ten border States)
- Expand regional efforts to address sea level rise/coastal land loss/storms induced by climate change, including siting of hazardous waste facilities with specific consideration of the needs of vulnerable communities
- Expand regional participation in EPA's WaterSense program to conserve water and energy
- Continue to seek other federal funding sources to accomplish CECC goals
- Participate in development of CO<sub>2</sub> geosequestration regulations, anticipated during the summer of 2008

## **Conduct outreach/education**

- Conduct outreach or fund others to do outreach and education on CECC (e.g., energy efficient light bulbs, green building methods, efficient water pumping, waste management, energy audits, etc.) to external parties, including natural disaster recovery/sustainable redevelopment with specific consideration of vulnerable communities
- Media programs will seek opportunities for cross media marketing of CECC initiatives such as Energy Star, WaterSense, Climate Leaders, WasteWise, etc., and State/Local/Tribal initiatives
- Create a One-Stop-Shop on the Intranet to serve as a central repository for the development of resource materials, including presentations, literature, posters, etc. related to climate change

## **Assess new technologies and developments and look for collaborations**

- Promote new applications of existing technologies through initiatives such as the National Clean Diesel Campaign, Blue Skyways, and Border 2012
- Target regional and other federal funding for one R & D project for renewable energy, clean energy production, or life cycle analysis of bio-fuel and other alternative fuel sources
- Implement internal management systems to apply new technologies and science that can address climate change effects through program adaptation

## **Emerging Actions**

### **Lead by Example**

- Reduce air travel and vehicle miles traveled by use of alternative methods such as teleconferencing and web conferencing
- Hold CECC awareness fair on ways regional employees can reduce their carbon footprint

### **Implement via programs, policies and partnerships**

- Conduct energy efficiency modeling analysis with the State of Texas
- Conduct energy demand reduction studies with the State of Louisiana
- Monitor and assess opportunities for partnering on CECC related programs (e.g., the Texas Loan Star, the City of Austin Climate Protection & Clean Energy Programs, and the New Mexico Climate Change Program, etc.)
- Implement the renewable fuels and the CO<sub>2</sub> equivalent vehicular standards, when promulgated

### **Conduct outreach/education**

- Develop and conduct a comprehensive, culturally sensitive training for States, Locals and Tribes to ensure we understand the connection between our day-to-day work activities and CECC
- Plan and sponsor a CECC Summit/Conference, targeting State participation
- Conduct a Green Utilities Conference with Region 7
- Engage the petroleum and petrochemical sectors to increase participation in the Refining Forum of Energy Star to address energy efficiency initiatives



# Appendix

## Employee Suggestions and Future Ideas

The following suggestions and ideas expand on the above set of goals and objectives. These items represent ideas from employees on how Region 6 can address climate change, including more specific updates of current regional activities and new actions. While the CECC Strategy Objectives described above generally reference many of these items, this list provides valuable ideas for ways that we could expand and improve the objectives in the future.

### 1) Conserve

#### a) Lead by Example

- Educate EPA staff on ways to minimize our carbon footprint
- Switch to energy efficient light bulbs
- Conduct a carbon footprint/general environmental awareness contest
- Review R6 internal operations with a goal of reducing energy consumption (implement EMS)
- Explore ways to increase R6 employees' use of teleconferencing & Flexiplace
- Develop ways for R6 employees to travel smarter
  - reduce air and other travel/VMT
  - increase car pooling and public transit participation
  - increase employee participation in the flexiplace program
  - implement Ozone Watch Support Corps: flexiplace triggered by ozone watch days
  - develop a ride share web site
  - encourage web and telephone conferencing to save on fuel and money

#### b) Implement via Programs and Policies

- Develop language/guidance to promote clean energy through existing EPA activities
- Bias R6 grants toward clean energy and climate change projects
- Continue:
  - promoting energy conservation via SIPs
  - using federal funding sources for energy conservation (e.g., Dept. of Ag. Sec. 9006, DOE assistance programs)
  - participation in EPA-Administrator's Clean Energy-Climate workgroups
  - promoting Performance Track program
- Develop standard text for consent decrees that addresses reductions in energy use
- Expand use of SEPs for energy conservation
- Expand ways to reduce GHG emissions through existing energy conservation and renewable energy initiatives, such as the Blue Skyways Collaborative and the Dallas Sustainable Skylines Initiative
- Promote Smartgrowth, & sustainable development programs
- Develop program guidelines (e.g., Brownfields, SRF, etc.) to yield energy conservation benefits
- Increase energy conservation focus of Design for the Environment (DfE) programs
- Promote energy audits

### **c) Implement via Partnerships and Initiatives**

- Develop new energy conservation opportunities in public-private partnership collaboratives such as:  
Clean Diesel Campaigns, SmartWay Transport Partnership, Blue Skyways Collaborative, Dallas Sustainable Skylines Initiative, Combined Heat and Power Partnership (CHP program)
- Continue:
  - promoting EnergyStar, WaterSense, water Green Infrastructure Strategy
  - holding R6/States/Cities/Tribes Clean Energy/Climate Change conferences
  - participating in ongoing HQ voluntary energy conservation programs (e.g., Climate Leaders, LMOP, AgStar, others)
  - promoting LED light bulbs
  - promoting energy efficient water pumping
  - participation in TX Energy Partnership
  - partnering with State of Texas in energy efficiency-air quality modeling (including State Select Committee on Long-term Energy Planning)
  - partnering with LA in home energy rebate programs (e.g., HERO & HELP)
- Collaborate with large venues in the private, public, and the academic sectors to make them Green Venues
- Promote green buildings (e.g., through BSC, DSSI and Green Dallas programs)
- Waste Management: Change how materials, products and wastes are managed:
  - Promote reduction of municipal, industrial and construction waste in the region
  - Recruit governments and companies to become partners in WasteWise
  - Increase Recycling in Region

### **d) Conduct Outreach/Education**

- Influence school curricula on conserving energy
- Educate the public on ways to conserve energy (via mass transit, energy demand reduction, fuel efficient vehicles, energy efficient light bulbs, etc.)
- Promote the use of residential smart meters
- Train wastewater and drinking water utilities to conduct self-audits
- Promote water and energy efficiency in the water, wastewater, and energy utility sectors via the Energy Star and WaterSense initiatives

### **e) Assess New Technologies and Developments and look for Private/Federal/State/Local/Tribal Collaborations**

- Track new technologies & work with industry to encourage energy conservation from:
  - vehicles (e.g. plug-in hybrids)
  - transportation systems
  - combustion processes
  - improved materials management (product design, recycling/reuse, source reduction)
  - increased equipment efficiency
  - optimized electricity use schedules



- Use EPA mechanisms to bolster applied science contributions in research & development (via RARE, STAR, DOE grants) on energy conservation technologies (e.g. more efficient battery storage)
- Investigate initiating a Regional Energy Star Challenge
- Determine potential for partnerships with:
  - TX LoanStar energy efficiency Program
  - TX Site Assistance Visit Plus program (energy audits)
  - City of Houston/Clinton Global Climate Initiative
  - City of Austin Climate Protection & Clean Energy Programs
  - NM Climate Protection Programs
  - Arkansas Global Warming Commission
  - Oklahoma GHG registry program
  - Universities promoting research and/or practical applications related to climate change
- Investigate developing energy conservation labeling for consumer products

## 2) Reduce GHG Emissions

### a) Lead by Example

- Seek to include GHG reductions in SEPs and incorporate climate change considerations into EIS reviews

### b) Implement via Programs and Policies

- Develop standard text for consent decrees that addresses GHG reductions
- Continue to support the use of the DART mass transit system and encourage businesses in the DFW area to do the same
- Be the federal leaders for CO<sub>2</sub> sequestration education, outreach, and science
- Work with OW to develop CO<sub>2</sub> geosequestration regulations, anticipated during the summer of 2008. Develop related guidance and educational materials
- Work within existing programs to obtain conventional emissions reductions from the energy generation and industrial sectors
- Develop program guidelines (e.g., Brownfields, SRF, etc.) to yield GHG reductions
- Fully implement the Air Emissions and Fuel Use environmental management plans (EMPs) under the Region 6 Office and Laboratory EMSs
- Challenge electric utilities to reduce their GHG emissions through increased renewable energy production and energy efficiency programs
- Partner with States, Tribes, NGOs, locals, etc. to promote CO<sub>2</sub> sequestration via trees, soils or other organic materials (e.g., Chino Mine)
- Investigate the feasibility of promoting CO<sub>2</sub> sequestration on contaminated sites via soil amendments and plant growth

- Following a successful in-house pilot of the Ozone Watch Support Corps and the Work-N-Ride programs, encourage their adoption by businesses in the DFW area

**c) Implement via Partnerships and Initiatives**

- Work to improve the collection of methane from landfills, coal mines, natural gas pipelines, oil and gas exploration activities, etc.
- Work to reduce N<sub>2</sub>O and methane emissions from agriculture by improving fertilizer application procedures, treatment of livestock waste, and rice production practices
- Work to reduce the emissions of hydrofluorocarbons, perfluorocarbons and other high global warming potential gases in manufacturing processes
- Work to reduce the emission of black carbon aerosols
- Encourage expansion of the light rail system and a resurrection of passenger rail services
- Promoting retrofits and conversions of Border diesel trucks (e.g., use of OAP/OIA Border funding)
- Prioritize the promotion of Performance Track to petrochemical industry
- Work with existing Regional initiatives (e.g., Blue Skyways Collaborative) to promote overall GHG reductions
- After initial Region 6-States Clean Energy-Climate conference, plan a conference focusing on GHGs and the petrochemical industry

**d) Conduct Outreach/Education**

- Establish a Web based One-Stop Shop of ways to reduce GHG emissions
- Develop outreach strategies to promote GHG reduction at homes and businesses
- Purchase/negotiate TV and/or radio air time for 30 second “Reduce Your Carbon Footprint” spots à la the “Don't Mess With Texas®” campaign
- Ramp-up efforts with sectors identified in EPA’s 2007 Sector Strategies Report
- Conduct annual EMS training for all Region 6 employees (including on Executive Order 13423)

**e) Assess New Technologies and Developments and look for Private/Federal/State/Local/Tribal Collaborations**

- Promote new technologies for improved energy delivery, energy efficiencies, and land use management as relates to GHG reductions
- Advocate the replacement of current feedstocks with those that have low or no GHG emissions
- Work to reduce diesel emissions through retrofits, use of biodiesel or alternative fuels, reducing operating and idle time, and engine replacement
- Track new technologies & work with industry to encourage GHG reduction

### 3) Adapt to Climate Change Impacts

#### a) Lead by Example

- Review and revise internal policies to improve environmental performance of Region 6 operations in areas such as energy and water efficiency, use of alternative fuels, reduction of paper use, and fleet fuel economy
- Modify EPA R6 awards to emphasize climate change

#### b) Implement via Programs and Policies

- Each program should conduct a multi-layered assessment for how each program can consider short-term and long-term climate-related effects:
  - Provide a baseline to support regulatory/policy change
  - Better focus resources to prepare for changes, whether they are in the immediate future or longer termed
- Examine/restructure grants/cooperative agreements/extramural funds (contracts and other financial assistance sources) to utilize for climate change initiatives until budget appropriations are provided for these activities
- Integrate climate change considerations into Agency operations and core programs, e.g., reconsider siting requirements for hazardous waste facilities in areas most vulnerable to flooding (coastal/wetlands)
- Update emergency response plans to include considerations of:
  - Emergency power for water and wastewater treatment systems
  - Emergency shut-down procedures (and start up) for treatment systems
  - Disruption of fuel, food, medical supplies, and evacuation routes
  - Post-event inspection checklists
  - Storm-event design and contingency operation considerations for waste management sites, including increased secondary containment for each site, etc.
  - Disproportional effects on vulnerable communities
- Develop standard text for consent decrees that addresses reductions in energy use
- Incorporate “event” considerations into routine site optimization and five-year reviews required by CERCLA, RCRA permits, and other EPA oversight mechanisms
- Incorporate climate change considerations in EIS reviews
- Promote the evaluation of water systems and reservoir/aquifer storage capacities in areas that are expected to be vulnerable to loss of snow cover and change in snow melt patterns. Begin funding infrastructure upgrades now to address future climate conditions and water needs.
- Emphasize climate change (i.e., hydrogen fuel cell in Galveston) in the use of Supplemental Environmental Projects as part of the compliance program

### c) Implement via Partnerships and Initiatives

- Expand EPA Region 6 coordination & technology transfer activities related to the issue of sea level rise/coastal land loss induced by climate change
- Designate a Climate Change/Sea Level Rise Coordinator within the Water Quality Protection Division's Ecosystem Protection Branch
- Participate in the OW Climate Ready Estuaries program -- Work with the three R6 National Estuary Programs to gain entry into the pilot program & provide technical assistance to other NEPs in areas such as:
  - watershed planning
  - wetland restoration
  - developing conservation easements
  - tracking inundation elevation changes
  - monitoring habitat changes
  - predicting isohaline alterations
  - responding to the spread of invasive species
- Coordinate with TX, LA, NOAA & USGS regarding SLR projections and impacts
- Look for opportunities within the wetland, watershed, and 319 programs to allocate funding toward sea level rise adaptations (sustainable ecosystems) and data analysis
- Coordinate with OW regarding environmental indicators of coastal/wetland climate change (explore possibility of dedicating the next Coastal Condition Report to climate change impacts)
- Coordinate with the Gulf Breeze Lab and the Las Vegas Landscape Ecology Branch regarding SLR adaptive monitoring tools & techniques
- Coordinate with the Regional Science Council regarding the possibility of designating the 2009 seminar series to speakers on climate change/SLR
- Explore the possibilities of encouraging climate change impact projects through the RARE & RGI funds
- Use CWPPRA, NEP, dredged material management, LCA, and other coastal program spheres of influence to promote landscape scale (as opposed to more limited site-specific) coastal restoration, enhancement, and mitigation projects designed to offset the additive effects of climate induced land loss
- Work with Federal and local CWPPRA partners to encourage the development and support of landscape scale restoration projects
- Use dredged material management program contacts to work with the Corps to expand the definition of "federal standard" to include federal expenditures for the beneficial use of dredged material to help offset the effects of climate induced local land loss
- Climate Working Groups:
  - Participate in land remediation (Climate Change and Contaminated Lands) Workgroup
    - Establish a Cross-program/division CECC Team, and include Homeland Security and Enforcement representatives

- Promote the use of alternative technologies for energy production and energy/water efficiency initiatives that address climate change effects to DW/CWSRF implementing agencies. Encourage states to offer lower interest rates and longer term loans for such initiatives
  - Actively promote sustainable, new (post-event) development projects. Work with federal partners, Tribes, local and state governments, builders

**d) Conduct Outreach/Education**

- Disseminate materials and briefings produced by EPA Headquarters on climate change response actions periodically to a wide variety of EPA advisory groups, State and Tribal organizations, and stakeholder organizations
  - Conduct training for regional employees, States and Tribes (at a minimum), to ensure they understand the connection between their day-to-day work activities and CECC
  - Establish a “One-Stop Shop” of climate change information on EPA Region 6’s Web Page
- e) Assess New Technologies and Developments and look for P/F/S/L/T collaborations
- In all media programs, look for opportunities to apply new technologies and science that can address climate change effects through program adaptation measures

**4) Promote Clean/Renewable Energy Sources**

**a) Lead by Example**

- We will promote the use of Clean and/or Renewable Energy Sources by our own decisions to “do the right thing” and to serve as an example to other governmental agencies and the general public
  - Conduct in-house training for managers & staff
  - Select energy providers for regional facilities based on environmental sustainability
  - Select vehicle options that are clean/renewable fueled
  - Use flexibility within grants & contracts to facilitate adoption of clean energy power and fuels
- Go hybrid when possible with the Region 6 fleet of vehicles

**b) Implement via Programs and Policies**

- We will promote the use of Clean and/or Renewable Energy Sources by actively leading and participating in national and regional programs, by incorporating green principles into the Agency’s regulatory programs
  - Encourage the incorporation of production/use of renewable energy into the remediation of contaminated properties (e.g., Chino Mine CSP Project, Brownfields, RCRA sites, Superfund Sites)

### **c) Implement via Partnerships and Initiatives**

- We will promote the use of Clean and/or Renewable Energy Sources by actively partnering with external organizations and agencies
  - Participate in national and regional clean energy and climate initiatives with an emphasis on those having the greatest impact to the people in Region 6
  - Work with external parties (state/tribe/local and other Federal agencies) and participate in their initiatives to encourage use of alternative fuels and renewable energy by individuals and companies
  - Participate actively in partnerships through funding activities, convening and facilitating meetings and providing technical assistance
  - Encourage participation in ongoing HQ voluntary renewable energy programs (e.g., Green Power Partnerships, Solar America)
  - Promote solar, wind and geothermal power through regional partnerships such as the Dallas Sustainable Skylines Initiative and the Blue Skyways Collaborative

### **d) Conduct Outreach/Education**

- We will promote the use of Clean and/or Renewable Energy Sources through our role as advocate and educator with external parties including: state/tribal/local governmental agencies, other Federal agencies, U.S. / Mexico border communities, the regulated community and the public at large
  - Encourage the selection of clean and/or renewable sources of power and fuel decisions
  - Provide technical assistance and outreach to commercial, educational, and industrial facilities
  - Advocate the adoption of Green Building standards and techniques to facilitate the use of solar, wind, bio-mass, geothermal and other clean and/or renewable fuels
  - Promote clean and renewable energy education in schools

### **e) Assess New Technologies and Developments and look for Private/Federal/State/Local/Tribal Collaborations**

- We will promote the use of clean and renewable energy sources by assessing new and existing technologies and developments
  - Provide funding for demonstration projects for the new application of existing technologies through the initiatives such as the National Clean Diesel Campaign
  - Support research & development in these areas of interest:
    - Development of alternative sources of energy (hydrogen as a fuel, new solar, wind, geothermal and nuclear applications)
    - Clean Energy Production (carbon sequestration, waste-to-energy approaches)
    - Life Cycle Analysis for bio-fuel and other alternative fuel sources
  - Monitor activities of states, tribes, local and other federal agencies, universities, industries, and non-governmental organizations for new advances and developments that could be utilized elsewhere

# List of Acronyms and Abbreviations

BSC	BlueSkyways Collaborative
CECC	Clean Energy and Climate Change
CO <sub>2</sub>	Carbon dioxide
CHP	Combined Heat and Power
CSP	Concentrated Solar Power
CWPPRA	Coastal Wetlands Planning, Protection and Restoration Act
DART	Dallas Area Rapid Transit
DfE	Design for the Environment
DOE	U.S. Department of Energy
DSSI	Dallas Sustainable Skylines Initiative
DW/CWSRF	Drinking Water/Clean Water State Revolving Fund
E85	Fuel containing up to 85% ethanol
EIS	Environmental Impact Statement
EMS	Environmental Management System
GHG	Greenhouse Gas
GIS	Geographic Information System
HERO	Home Energy Rebate Option – Louisiana
HELP	Home Energy Loan Program – Louisiana
HQ	EPA Headquarters
LED	Light Emitting Diode light bulb
LMOP	Landfill Methane Outreach Program
N <sub>2</sub> O	Nitrous Oxide
NEP	National Estuary Program
NEPA	National Environmental Policy Act
NOAA	National Oceanic and Atmospheric Administration
OW	EPA's Office of Water
P/F/S/L/T	Private, Federal, State, Local, and Tribal
R & D	Research and Development
RARE	Regional Applied Research Efforts grant
RCRA	Resource Conservation and Recovery Act
RGI	Regional Geographic Initiative grant
SEP	Supplemental Environmental Project
SIP	State Implementation Plan
SLR	Sea Level Rise
SRF	State Revolving Fund
STAR	Science To Achieve Results grant
USGS	U.S. Geological Survey
VMT	Vehicle Miles Traveled