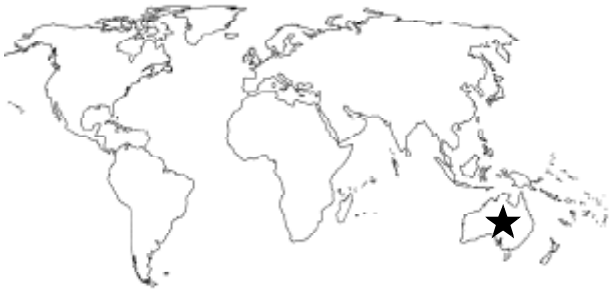
Case Study 75 Cities for Climate Protection: Australia



Objective: To reduce greenhouse gas emissions through energy planning
Location: Australia
Website: http://www.greenhouse.gov.au/lgmodules/

Description:
It has been estimated that through their planning powers, building codes and spending policies, Municipal Councils have a strong influence over the production of as much as 50% of Australia's greenhouse gas (GHG) emissions (OCH, 2000). As part of an overall package to reduce greenhouse gas emissions, the Federal Government is, through the Australian Greenhouse Office (AGO), providing $13 million in funding over five years to support the Cities for Climate Protection Australia Program (CCPAP). The CCPAP was initiated in 1998 and is delivered in partnership with the International Council for Local Environmental Initiatives (ICLEI), a worldwide membership association of local governments and national and regional local government associations that are committed to promoting sustainable development (ICLEI, 2001).

CCP Australia is a joint initiative of the International Council for Local Environmental Initiatives (ICLEI) and the Australian Greenhouse Office (AGO). As at 20th April 2001, 130 Australian councils were participating in the CCPA program; 43 had passed a Council resolution, 24 had reached milestone 1, 27 had reached milestone 2, 22 had reached milestone 3, and 11 had reached milestone 4, representing 56% of Australia's population (ICLEI, 2001a). It has been estimated that by 2008-2012 the CCPA program may have achieved almost 13 million tonnes of CO_2-equivalent (CO_2-e) reductions.

Assistance provided to CCP-Australia Participants
Before greenhouse gas reduction technologies can be implemented (which occurs at Milestone 4), Milestones 1, 2, and 3 must be reached. CCP-Australia provides relevant information and training, as well as the assistance of a recruitment manager who helps identify the most appropriate steps for councils to take in achieving the five CCP milestones. Training is offered for reaching each milestone as well as in media, community consultation, and the relationship between budget cycles and CCP.

The Australian Greenhouse Office has developed Greenhouse Action Modules which help councils implement effective greenhouse gas reduction activities. They encourage networking between councils, and range from workshops and technical assistance to software, workbooks and booklets.

Modules and Assistance Programs Provided by Either CCP-Australia or the AGO

Milestone 1: Conduct an emissions inventory and estimate emissions growth
Milestone 1 Assistance Program; provides assistance in completing emissions inventories and forecasts. The AGO provides $4,000 funding to employ temporary staff to assist with the completion of Milestone 1.

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Greenhouse Gas Emissions Software; allows quantification of greenhouse gas emissions from, for example, electricity production and waste operations, and includes default emissions coefficients consistent with the Australian National Greenhouse Gas Inventory. Training in quantification of greenhouse gas emissions is provided by CCP-Australia.
Data Management Sheets; help councils calculate greenhouse gas emissions and are fully integrated with the Greenhouse Gas Emissions Software.

They cover the following areas.

- Council buildings
- Council vehicle fleet information management
- Corporate green waste and recyclable organics
- The art of forecasting for the CCP™ campaign
- Water and sewage data management
- Specialised vehicles and equipment
- Street lighting
- How are we travelling?
- Increasing public transport options
- Driving the alternatives: alternative fuels and how to use the CCP™ software

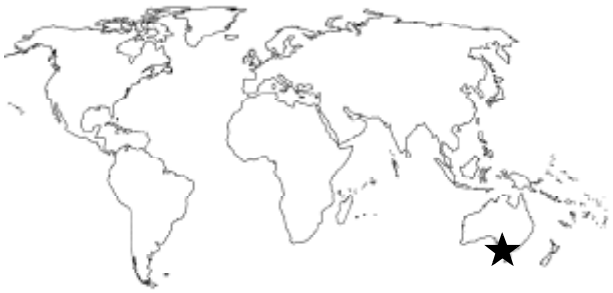
Milestone 2: Establish an emissions reduction goal
Energy Management Advisory Service and forums; assists councils on a range of issues especially developing energy management systems for council buildings.
Green Energy Learning Program (GELP); illustrates how Newcastle City Council has made greenhouse gas reductions action self funding through energy efficiency and energy management programs. Three participants from each council are funded by the AGO.
Measures Sheets; are used to quantify emissions from a variety of areas as below.:

- solar lighting
- light emitting diodes
- alternative fuel options for the community
- corporate water supply and sewage treatment
- seeing the light: how changing streetlights can reduce emissions
- green waste - home composting
- hot water energy conservation
- photovoltaic panels and BIPV
- making the most of heating ventilation and cooling systems
- opportunities for measures in the residential sector

Milestone 3: Develop a Local Action Plan
Office Lighting Retrofit; provides in-house technical expertise to assist councils in identifying, developing and implementing lighting upgrades in their city council facilities.
Managing Energy in Local Government; a free workbook to help councils and businesses implement energy efficiency and energy management programs.
Greenhouse Homes; helps councils implement appropriate residential planning and energy efficiency measures for home buyers, home renovators and builders.
CITY Green; enables councils to measure and model the ability of trees to reduce heat islands and thereby improve residential and commercial energy efficiency.
Technical support materials; assist councils identify their capacity to take action on greenhouse emissions. They cover what councils can do to promote greenhouse gas reduction in the transport, industrial, commercial and residential sectors. In particular: high and low-emission transport, cleaner production, waste management, non-residential building design, partnerships with energy suppliers, greenfield developments, and medium-density housing developments.

Milestone 4: Implement the Local Action Plan
Emissions Reduction Incentive Program (ERIP) Module Round 1; provides 50% of the costs of actions that result in significant sustained greenhouse gas reductions beyond the council's core activities across a wide range of sectors, eg transport, waste and buildings. Round 1 closed on the January 25, 2001.

Case Study 76 City of Melbourne Greenhouse Action Plan



Objective: To develop and implement an action plan to reduce greenhouse gas emissions from the city.
Location: Melbourne, Victoria, Australia
Website: http://www.melbourne.vic.gov.au/greenhouse/

Description:
The Council's list of projects include:

1. Buildings
   Energy Audits and Retrofits
   Renewable Energy Generation
   Renewable Energy Purchase

2. Public Lighting
   Audits/Upgrades
   Renewable Energy

3. Vehicle Fleet
   Greenfleet
   Alternative Fuel Passenger Vehicles
   Transporting Staff

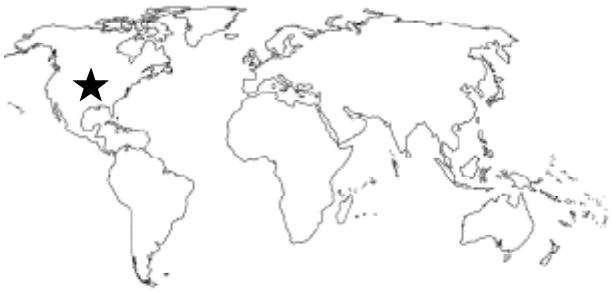
4. Waste
   Waste Wise

5. Strategic Initiatives
   Sustainability Assessments
   Environment Champions
   Environmentally Responsible Procurement

A list of community action plans has also been developed in projects include:

- Commercial Building Partnerships
- Renewable Energy (including solar hot water and Green Power Schemes)
- Energy Efficient Developments in the Residential Sector
- Rooftop Greening and Water Harvesting
- Integrated Transport Systems
- Waste Wise Businesses and Organisations
- Organic Waste Processing
- LFG Extraction and Electricity Generation
- Carbon Sequestration (Tree Planting)
- CNG Waste Trucks and Public Refuelling Sites

Case Study 77 Portland Energy Plan



Objective: To save energy via a local energy efficiency program
Location: Portland, Oregon, USA
Website: US Department of Energy case study
http://www.eren.doe.gov/cities_counties/enrgyuse.html
Portland Energy Policy 1990
http://www.sustainableportland.org/energypolicy.pdf

Description:
Portland, Oregon, provides one of the nation's best examples of how energy planning can become an integral part of comprehensive urban planning. The benefits to Portland include energy dollar savings, air pollution and traffic congestion reductions, quality of life enhancements, and local economic stimulation.

Portland's approach to energy planning is the broad-ranging 1990 Portland Energy Policy. Under this policy, the city is improving energy efficiency in municipal buildings, residential buildings, commercial and industrial facilities, transportation, and energy supply. The policy also requires increased recycling, decreased waste, and the development of telecommunications as an energy-efficiency strategy.

Why Portland's Policy Succeeds
Portland's policy has clear goals: Overall, Portland has set a goal of increasing energy efficiency citywide by 10% by 2000. In dollars, Portland expects its total energy consumption in all sectors to reach $1 billion by 2000, so the energy-efficiency increase means that $100 million will be retained within the local economy. To achieve this energy-efficiency goal, the energy policy sets forth 53 two-year objectives and 36 long-term objectives.

Portland's policy has authority. The Portland Energy Office manages the day-to-day implementation of the policy. "The policy has given us credibility, a way of merging energy with other issues," says Energy Office Director Susan Anderson. "That's key, because people may not care about energy. But they do care about keeping their houses warm, getting to work, traffic congestion, affordable housing, air and water pollution, and economic development for business. Energy ties all of those individual
issues together."

The energy policy was adopted as official city policy by a vote of the Portland City Council and was incorporated into the city's general plan. The Portland Energy Commission, made up of citizen volunteers appointed by the mayor and city council, actively oversees implementation and updating of the policy.

Converting Policy into Results

Merging energy into other issues, the Portland Energy Office plays a variety of roles. It identifies opportunities for energy-efficiency improvement and sources of funds to pursue these opportunities. The energy office is also an energy-related information clearinghouse. Its staff members provide consultations throughout the community. Sometimes the consulting is free. In other cases, energy office staff members are consultants for hire on projects affecting the city's energy consumption. In fact, the Portland Energy Office brings in three dollars' worth of grants and contracts for every dollar it draws from the city's general fund.

However, most of the energy policy implementation is not done by the energy office, according to Ms. Anderson. "Our primary role is to be the facilitator," she says. "We found some funds to convert seven city vehicles to natural gas, for example. Our job was to get other departments excited about it and up to speed on it, and then we got out of it." Through such efforts, most of the 53 two-year objectives were implemented by the end of 1992, with considerable progress toward many of the 36 long-term objectives.

Portland's City Government Is Involved

The City Energy Challenge program was launched in July 1992. The goal of this program was to identify and implement energy-efficiency projects that would cut $1 million from the city's annual energy bill by 1997. Based on energy costs to city facilities in 1991, which totalled $9.14 million, the $1 million reduction represents an 11% reduction in energy bills. To achieve this goal, the city imposed a 1% fee on all city government energy bills. Totalling about $70,000 per year, these fees were used to hire an energy management coordinator for city facilities. Result: by the end of 1992, Portland had already implemented measures or identified opportunities to save more than $775,000 annually.

Portland's Citizens Are Involved

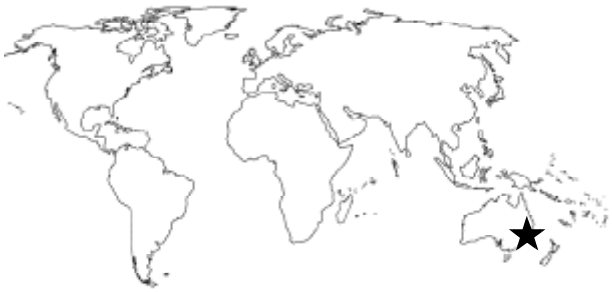
The energy policy included plans to facilitate the weatherisation of 8000 units in low-income, multi-family housing complexes by 1992 and 20,000 such units by 2000. By October 1992, Portland apartment owners had spent more than $6 million weatherising some 8300 apartments. Working under contract with three local utilities and the Oregon Department of Energy, The Portland Energy Office recruited apartment owners for the program and helped them to apply for more than $2.9 million in utility and state cash rebates and tax credits. Buildings weatherised through this program achieved average energy savings of at least 26% on space heating. Also during this period, another 4000 apartments received energy audits and had weatherising work in progress, and an additional 1300 apartments had energy audits pending.

Portland's Businesses Are Involved

The Portland Energy Office's BEST (Business for an Environmentally Sustainable Tomorrow) program provides consultants to help local businesses save energy, conserve water, reduce waste generation, and promote clean and efficient transportation. The program, begun in January 1992, was intended to help 50 businesses during its first year. By the end of 1992, it had help 63. Through the BEST program, the Portland Energy Office helps businesses:

- obtain energy design assistance
- apply for state tax credits
- obtain rebates and incentives offered by local utilities
- select appropriate and energy-efficient technologies
- get long-term, fixed-rate financing for energy projects
- recycle construction waste
- use water more efficiently
- find transportation alternatives for employees
- receive recognition as energy and environmental leaders.

Case Study 78 Energy Plan as Part of Environment Plan for Newcastle, Australia



Objective: To develop an energy management plan for a city
Website: http://www.ncc.nsw.gov.au/environ/eenergy.htm

Description:
General Strategies

- Engage an energy conservation officer for 2 years to coordinate a self funding energy conservation program within Council operations.

- Carry out assessments of new major developments undertaken by Council during the design phase to ensure the most efficient use of energy is achieved.

- Document and regularly publish Council's continual improvement in energy conservation.

- Lobby for implementation of true cost energy pricing as a demand management tool and seek a fixed proportion of revenue raised be returned to:
  1) local government energy conservation education programs;
  2) University research and development of alternative renewable technology.

- Publish a record of domestic energy consumption for the City quarterly in local newspapers and compare to community based goals.
- In cooperation with the Roads and Traffic Authority and the NRMA (*National Roads and Motorists' Association*), publicise energy consumption rating for vehicles to assist consumers to make informed choices when purchasing vehicles.

- Promote, demonstrate and facilitate diversification of energy sources encouraging the increase of the proportion and use of renewable energy supplies such as solar, biogas and wind power.

- Implement strategies to encourage urban development which reduces the need to use private vehicles for routine travel.

- Approach the University of Newcastle to develop an alternative energy technology and energy conservation research and development focus.

- Participate in national, state and regional programs to achieve sustainable energy use.

- Introduce energy conservation awards to recognise innovations in energy conservation locally and assist successful candidates to enter national and state competitions.

- Pool resources with energy utilities s to conduct a citywide energy conservation promotion.

Suburban Strategies

- Produce energy efficient design guidelines applicable to subdivisions, construction of new homes and major renovation of existing homes.

- In cooperation with relevant industry associations, maintain a list of architects, landscape architects, planners, surveyors, builders and designers who specialise in energy efficient design.

- Carry out the House Energy Rating System (HERS) assessment for all dwellings approved recording the equivalent star ratings attained in building approvals, building certificates and property files; and review in 1997 the necessity for implementing a mandatory minimum rating.

Industrial/Commercial Strategies

- Require professional energy efficiency assessments be prepared for all developments valued at over $500,000 and any significant energy consuming development under that value.

- Pilot in cooperation with local suppliers an energy labelling scheme for commercial appliances which will assist small business.

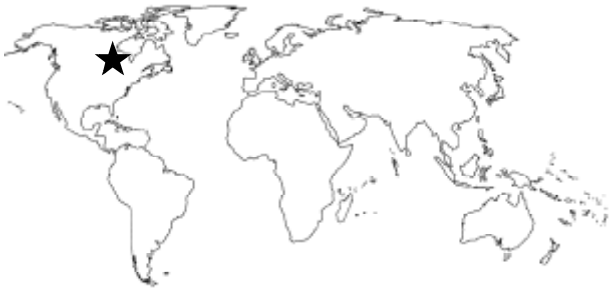
- Liaise with government and private sector training providers to offer accredited courses in Newcastle to develop skills of energy officers and auditors.

- Promote through education and grantsmanship the appointment of energy officers in industry.
- Encourage business to prepare energy conservation plans.

- Make available to industrial and commercial enterprises the Institution of Engineers, Australia, register of accredited energy auditors.

- In conjunction with energy utilities and petroleum companies, pursue the inclusion of NCC energy conservation goals into cooperative agreements with industry and commercial businesses.

Case Study 79 City of Toronto Sustainable Energy Plan



Objective: To create an urban sustainable energy plan
Location: Toronto, Canada
Website: http://www.city.toronto.on.ca/council/environtf_sustainable_energy.htm, http://www.city.toronto.on.ca/council/oct209.pdf

Description:
Recommendations from Part A of the City of Toronto Sustainable Energy Plan

- Articulate the Goal
  The City Council to adopt, as a long range goal, the development of a Sustainable Energy Infrastructure for the City.

- Create a Sustainable Energy Agency

- Pursue More Energy Efficiency Across the Corporation Immediately:
  - All Departments be requested to comeforward with energy efficiency plans, reducing energy use in their operations by 15%.
  - The Corporation undertakes a further 15%reduction in energy use in all buildings and facilities.
  - City Council authorizes the Energy Efficiency Office with the mandate and role to coordinate the Corporation's new energy efficiency efforts and requests that the Office act as a technical support to all Departments in the implementation of energy efficiency projects.

- The Waste Management Department be requested to conduct a full embodied energy/ greenhouse gas inventory on Toronto's waste stream and waste management options.

- Promote Comprehensive Energy Analysis in all New City Projects.

- Invest in Green Power Purchases Immediately

- Improve Sustainable Design in the Building Sector Immediately
  - The Buildings Department as part of a side collateral agreement for the issuing of a building permit requires the federal government performance C2000 for all new commercial buildings.

  - Create a City-wide Buildings Design

- The Energy Efficiency office implement the federal government's Energuide label for Housing in new and existing residential buildings. The Buildings Department be requested to offer priority to renovation permits on buildings with Energuide labels and plans for energy efficiency upgrades.

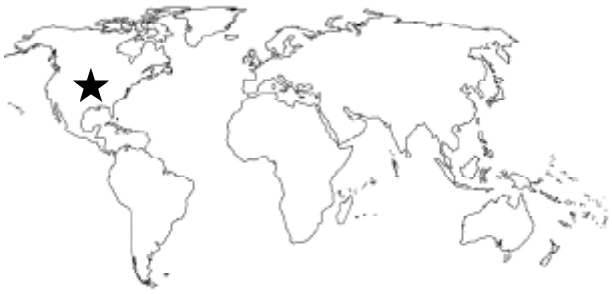
- Designate Model Energy Communities.

- Establish Green Enterprise Zones for Sustainable Energy Technology.

- Advocate Rate Structure that Encourages Efficiency and Renewables.

Other Case Studies at http://www.city.toronto.on.ca/council/oct210.pdf

Case Study 80 Chule Vista Energy Plan



Objective: To develop a plan to reduce urban greenhouse emissions
Location: Chule Vista, USA
Website: http://www.ci.chula-vista.ca.us/co2.htm, http://www.ci.chula-vista.ca.us/environ.htm

Description:
Chula Vista can lower its CO_2 emissions by diversifying its transportation system and using energy more efficiently in all sectors. These strategies not only save energy and CO_2, but they also increase personal and business savings, and create jobs. To focus City efforts in this direction, it is proposed that Chula Vista adopt the international CO_2 reduction goal of returning to pre-1990 levels by 2010.

In order to achieve this goal, the plan proposes a reduction strategy composed of the following eights elements:

1. To spur action, increase the public's awareness of the problem.
2. Reduce the long-term need for travel in the community through efficient land-use/transportation coordination and telecommunications technology.
3. Of the travel that does occur, provide for multi-modal choices.
4. Of the automobile driving that remains, work to make it as clean as possible.
5. Capture cost-effective building efficiency improvements in both new construction and remodeling through a mix of implementation approaches.
6. Lead the effort with municipal energy programs that can be showcased. Focus on encouraging personal and organizational (business, government, school districts, residential) actions.
7. Interlock the City's efforts with other regional programs in order to strengthen region-wide progress on climate protection (Air Pollution Control District, SANDAG programs). Examples include: the Telecenter effort, BECA, etc.
8. Focus initially on a few short-range actions to build visibility and results, and then periodically update and fine tune the strategy over time.

This strategy is to be implemented primarily through voluntary efforts with encouragement from a strong public information and advocacy effort.

When fully implemented in 2021, the action measures will save approximately 100,000 tons/yr of CO_2 emissions, which is roughly one quarter of the savings needed to achieve the international reduction goal. The capital and O&M costs represent a total outlay of roughly $95 million, which will be shared by municipal government, businesses, homeowners, and other regional agencies. This outlay, however, is estimated to produce approximately $130 million in savings to the community.