
Project title: Energy Management Plan
Strategy area: Environment

1. The Proposal

It is proposed that the Council develop and implement an Energy Management Plan (EMP) with the primary objectives of controlling the Council's energy consumption, energy expenditure (\$5.8 million in 2004/05) and production of greenhouse gas emissions. A secondary objective would be to advocate for the achievement of these same goals within the wider community after Council's in-house energy management capabilities have been established. The EMP would be trialled and reviewed after five years for its effectiveness.

2. Strategic Fit

The EMP will deliver on the energy component of priority #6 from the Environmental Strategy:

The Council will increase its promotion of water and energy efficiency and conservation, energy security, and the use of renewable energy sources, and it will take a more active leadership role in these areas.

3. Relationship to Existing Activities

The EMP will help to achieve the following outcome:

- **Outcome 8: More sustainable** - Wellington will reduce its environmental impact by making efficient use of energy, water, land and other resources; shifting towards renewable energy resources; conserving resources; and minimising waste.

Other activities related to the proposal include:

Communities for Climate Protection Programme (CCP) - Council is a member of the CCP Programme, with the principal goal of reducing greenhouse gas emissions. Approximately 100% of Council's emissions and 81% of the community's emissions are produced from burning fossil fuels for energy. In November 2005, the Strategy and Policy Committee agreed in-principle that an EMP would be an effective method of delivering on our commitments to the CCP Programme.

EnergyWise Partnership - Council agreed to become part of EECA's EnergyWise Council partnership in 2001. Under the partnership, Council aims to reduce its 2001 energy consumption by 15%. EECA strongly advocates for developing in-house energy management systems and is supportive of the EMP proposal.

Ad Hoc Energy Audits - Council occasionally undertakes ad hoc energy audits of Council facilities such as the Kilbirnie Regional Aquatic Centre (2003), Civic Buildings (2003) and Freyberg Pool (2000). The audits usually result in energy efficiency upgrades such as installing speed drives on filter pumps at the Kilbirnie Regional Aquatic Centre and installing variable speed drives for circulating pumps at Tawa, Freyberg & Keith Spry Pools.

4. Proposal Costs

<i>Outline project costs per year</i>										
Project Component	Operating expenses \$000									
	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16
<i>Energy projects</i>	20	20	20	20	20	---	---	---		
<i>Depreciation</i>	2.5	7.5	12.5	17.5	22.5	22.5	22.5	22.5	22.5	22.5
<i>Interest</i>	3.5	10.5	17.5	24.5	31.5	31.5	31.5	31.5	31.5	31.5
<i>Projected savings from energy projects[^]</i>	(17)	(57)	(97)	(137)	(177)	(177)	(177)	(177)	(177)	(177)
<i>Total</i>	9	(19)	(47)	(75)	(103)	(123)	(123)	(123)	(123)	(123)

Project Component	Capital Expenses \$000									
	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16
<i>Energy Projects</i>	50	100	100	100	100	---	---	---		
<i>Total</i>	50	100	100	100	100	---	---	---		

[^] The savings projections are based on a three year pay-back period.

5. Project Outline

The aim of the EMP is to mitigate the Council's energy consumption, energy expenditure and greenhouse gas emissions by implementing an effective energy management system. If implemented effectively, the EMP would be financially self-sustaining and result in net financial savings. The EMP would provide for:

- an energy manager position to implement the in-house component of the EMP through monitoring, reporting, benchmarking and annual business planning (prioritised from existing internal resources)
- initiatives relating to energy efficiency, energy conservation or application of renewable energy technology in Council's operations
- initiatives relating to sustainable energy use in the community.

The EMP will be trialled over a five year period to be reviewed in the penultimate year. The EMP can be continued for as long as it is cost effective and there are significant opportunities for savings to be made.

Energy Manager

The energy manager position would sit within Council's corporate structure. The core role of this position is to mitigate growth in Council's energy consumption. The responsibility of the energy manager would include:

- implementing a system for monitoring and setting targets and benchmarks for energy consumption and expenditure
- identifying opportunities and implementing projects which will reduce the Council's energy consumption, expenditure and greenhouse gas emissions
- reporting on energy consumption and energy savings projects
- promoting an energy management culture to conserve energy in Council
- managing the Council's energy supply contract, which includes monitoring the spot market for electricity.

Energy Fund

Some energy savings would be achieved by implementing actions identified by the Energy Manager without any additional funding needed. However, most significant energy savings projects – especially those involving renewable energy – will require additional investments in new technologies and construction costs.

In order to implement the energy projects that require additional funding, it is recommended that an Energy Fund is allocated each year. The fund would include \$100,000 of CAPEX and \$20,000 of OPEX to implement energy projects, such as installing heat recovery systems, solar water heating and efficient lighting technologies. An Energy Fund would make the EMP more effective by giving the Energy Manager more security for annual project management planning and business planning. Fifty thousand dollars is allocated for year one to allow for the additional time needed for the initial set up of the energy management system within Council.

The Council could also apply to EECA's Crown Loan Energy Scheme which provides \$2 million in loans to the public sector for energy efficiency projects.

5.1 Demand for Energy Management

Council does not have a coordinated, ongoing service or programme to implement energy management initiatives with our own operations. Council's electricity and natural gas consumption (which made up 87% of Council's \$5.8 m energy costs in 2004/05) have increased steadily over the past three years. The price of all forms of energy continues to rise (electricity expenditure is estimated to increase 20% following the electricity contract tendering process in January) and the Council's demand for energy will likely increase with the service expansion expected with population growth over the next 20 years. From a finance perspective, it is important that Council show leadership in this area by working to reduce its energy consumption and increase renewable energy applications to mitigate the budgeting impact of increasing energy prices and growing Council services.

5.2 Three-Year Deliverables

The EMP deliverables for the next three years will be:

2006/07

- develop and implement energy management plan, which will establish monitoring, analysis and reporting systems for the Council's energy consumption
- implement of energy savings initiatives to Council facilities and/or equipment

2007/08

- implementation of energy saving projects to Council facilities and/or equipment
- provide energy consumption benchmarks to Council business units

2008/09

- implementation of energy saving projects to Council facilities and/or equipment
- opportunities identified for energy conservation/efficiency projects in the community
- provide energy consumption benchmarks to Council business units

6. Conclusion

It is proposed that Council develop and implement an EMP to deliver on priority # 6: energy efficiency and Council's commitment to the CCP Programme. The aims of the EMP are to control Council's energy consumption, energy expenditure and production of greenhouse gas emissions. The EMP would cost approximately \$166,000 OPEX per annum to implement, and cost savings from energy projects would make the EMP financially self-sustaining.