



Rotorua Air Quality

Action Plan Implementation

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Snapshot of Progress 2009-2010

Improving Rotorua's air quality has been identified as a critical objective in providing the community with a healthier environment.

This Snapshot describes the progress that has been made in 2009 – 2010 to deliver the objective. This included achieving all the action points set down for the first year of the Action Plan.



**91% of people surveyed
now believe that they can
do something to improve air quality**

Framework for action

In the first year of implementation we have met the commitments that we made to the community, including:

- Development of incentive loan packages
- Development of local bylaws
- Promotion of community awareness of the air quality issue
- Promotion of actions such as burning dry wood.

We also achieved:

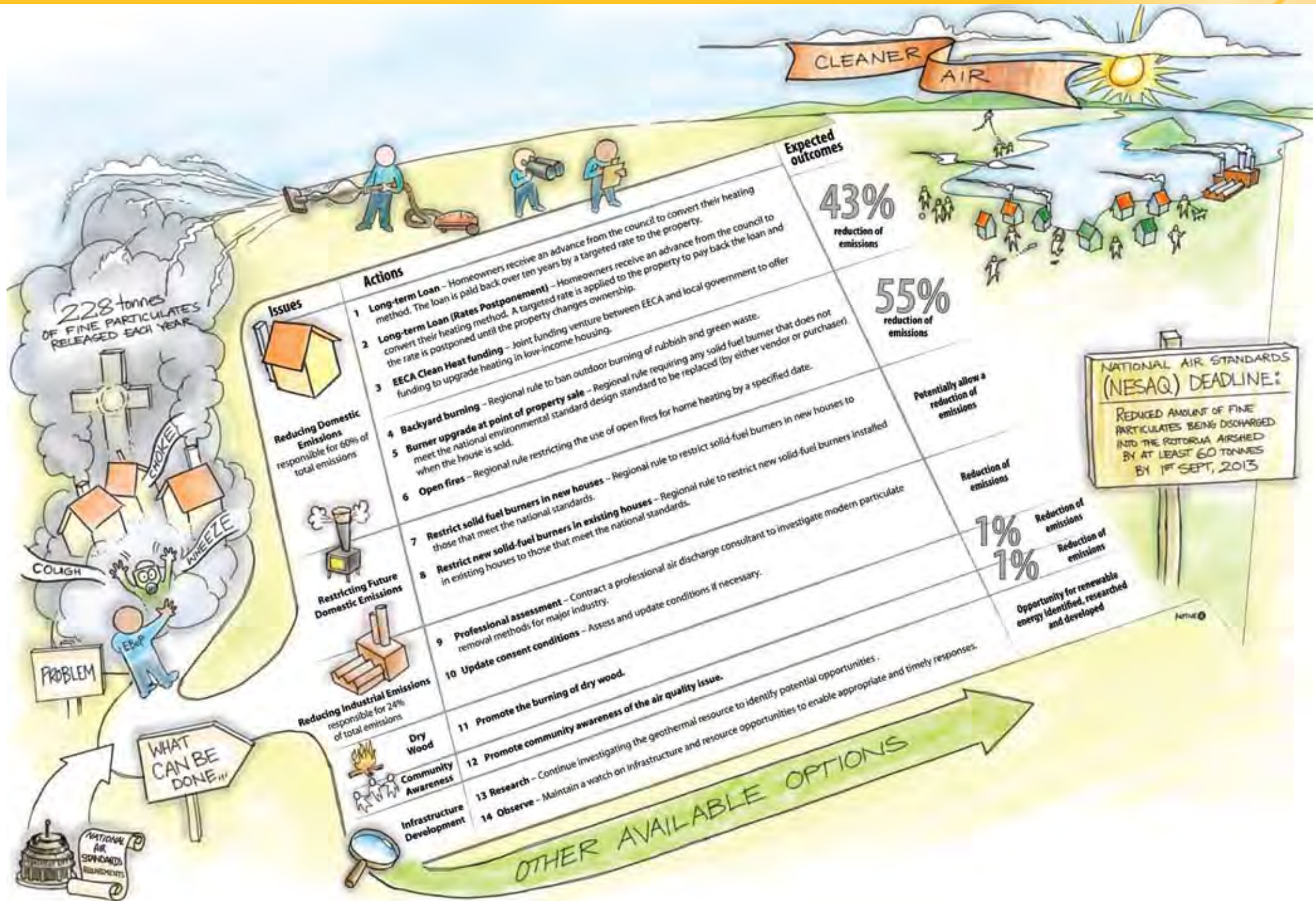
- Delivery of clean heat into low income housing
- Coordination with industry in the Ngapuna area to reduce emissions.

Actions:

- ✓ Carry out conversion of low income homes under the Clean Heat Project (*Action 3 on page 13*)
- ✓ Implement regulations (*Actions 4-8 on page 14*)
- ✓ Initiate contact with major industries to discuss voluntary emissions reductions (*Actions 9-10 on page 16*)
- ✓ Promote community awareness of the air quality issue and the burning of dry wood (*Actions 11-12 on page 18*).

Preparation:

- ✓ Develop the incentive loan packages and how they will be delivered.



Highlights for year 1 of the Rotorua Air Quality Action Plan implementation

During this first year we have completed the actions proposed for Year 1. This has been a significant achievement.

Highlights include:

- Converting 79 low income homes to cleaner heating under the Clean Heat Project bringing the total for the last three years to 231 conversions
- Drafting and public notification of a local air quality control bylaw to introduce regulations that restrict and reduce emissions from domestic heating appliances
- Launching two successful social marketing campaigns that raised the awareness of the air quality issue in Rotorua and promoted the burning of dry wood
- Site assessments of 70 industrial sites in Ngapuna to identify potential sources of ambient dust
- Completing a boiler review of Tachikawa Forest Products (NZ) Limited
- Investigating ways to promote the burning of dry wood.

We have also completed a significant amount of preparation for the next phase of implementation, which will focus on incentive loan packages:

- Developed an incentive loan package to encourage the community to undertake clean heat conversions
- Developed processes to communicate and deliver the incentive loan package to homeowners in the Rotorua Urban Airshed
- Commenced tendering process for service providers to deliver the heating packages
- Developed a promotion campaign to encourage take up of the incentives.



Background

The Rotorua Air Quality Action Plan (the Action Plan) was approved as a guidance document by the Bay of Plenty Regional Council (the Regional Council) on 16 December 2008. The Action Plan was publicly notified in the Bay of Plenty Regional Council's Ten Year Plan 2009-2019. Implementation started on 1 July 2009.

We have completed the first year of implementation. All actions that were proposed for completion by 30 June 2010 have been substantially achieved.

The Rotorua Air Quality Action Plan sets out 14 different actions to reduce particulate emissions, mainly from domestic and industrial sources. From 1 July 2009, council staff commenced a programme of work to implement the Action Plan. The goal of this programme is to manage and coordinate all aspects of the Action Plan to effectively and efficiently reduce emissions of particulates.

All actions that were proposed for completion by 30 June 2010 have been substantially achieved

The two main proposed outcomes of the Action Plan are:

- To reduce the number of times that the National Environmental Standards for Air Quality are exceeded in a year. The desired target is one a year.
- To convert approximately 7650 solid fuel burners to clean heat appliances. The incentive loan package has been designed to help achieve this and consists of the following three phases:
 - Phase 1 – 2009–2010 Promotion and set up
 - Phase 2 – 2010–2014 Delivery and take up of incentive loan packages
 - Phase 3 – 2014–2019 Programme wind down.

The Action Plan covers six 'action' areas:

1. Reducing domestic emissions
2. Restricting future domestic emissions
3. Reducing industrial emissions
4. Promoting the burning of dry wood
5. Promoting community awareness of the air quality issue
6. Infrastructure development.

CASE STUDY

Landlord approachable about upgrading to clean heat



Last year the Amopiu family rental home had an ineffective fire which was also very expensive to run. Last winter Freda & Eru's wood cost over \$1,200 and didn't even heat the living room properly.

Keeping their family warm and healthy is their priority in life, and led to the decision to approach their landlord to discuss the poor heating.

They were very pleased to discover their landlord was open to discussion and investigated clean heat and presented the options to Freda and Eru. They decided on a heat pump for their home.

Landlords might not know how cold the property is as they don't live in it

The Amopiu's recommend tenants discuss heating options with their landlords. They believe landlords might not know how cold the property is as they don't live in it. Freda also suggests that people should consider home heating before moving into a rental property.

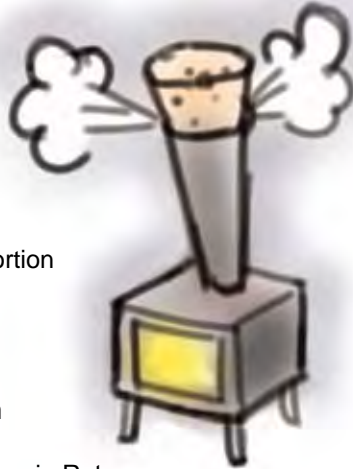


Action Areas – Reducing and Restricting Domestic Emissions

During this year we have completed several actions aimed at reducing and restricting domestic emissions.

The main causes of domestic emissions are the inefficient solid fuel burning appliances (open fires, coal fires, and old woodburners) being used to heat homes. Backyard burning of green waste and rubbish also contributes a proportion of domestic emissions.

The Action Plan proposes to reduce and restrict emissions by a combination of incentives and regulations. Using these two approaches, we aim to convert approximately 7,650 homes to clean heating appliances. That is about 40% of all houses in Rotorua.



Incentive loan packages

In the first year of implementation we have completed the development of incentive loan packages suitable for Rotorua. The development process included undertaking market research, reviewing delivery methods, and commissioning a marketing campaign.

We carried out market research to find out how people were currently heating their homes, and identify both the barriers and incentives to change. A range of incentive packages was tested on surveyed households within Rotorua and the most suitable option selected.



The preferred package for both homeowners and landlords consisted of the following:

- A heating package (includes assessment, appliance purchase, installation, removal of old appliance and building permit) up to a value of \$4,000
- An interest free loan paid back over ten years via a targeted rate on the property

Flow charts were developed to identify key processes within the incentive loan scheme, starting with homeowners registering their interest, and on through to the completion of works, quality control, and payment of the debt via a targeted rate.

A Request For Proposal inviting service providers to carry out the work was publicly released in June. Council staff will assess the responses and contract the successful service providers in time for Phase 2 of the incentive loan programme.

A marketing campaign designated as the “Rotorua Hot Swap” has been developed to promote the uptake of the incentives. The media selection for this campaign includes radio advertising, print, billboards and bus shelter advertisements.

Incentives will be available in September 2010

Interest was also shown in a loan that is paid back on the sale of the house (rates postponement). This option is still being investigated and may be introduced as an incentive in future.

Other incentive options will also be investigated



Clean Heat funding

The Regional Council continues to co-fund the Clean Heat Project run by the Energy Efficiency and Conservation Authority (EECA). The work is carried out by Energy Options and provides a 100% subsidy for a clean heat appliance to eligible low income houses.

Eligibility criteria limit the recipients to homeowners with Community Service Cards within problem airsheds such as the Rotorua Urban Airshed. The house must have been built before 2000 and already be insulated.

100% subsidies for clean heat appliances in eligible low-income houses

This year the Regional Council contributed \$185,248 to the Clean Heat Project, with a further \$185,248 provided by EECA. Conversion of 105 low income houses was expected. This was based on the expectation that 60% of houses would replace their burners with heat pumps, 20% with modern woodburners, 15% pellet fires, and 5% gas heaters.

Seventy-nine conversions were completed. This below target result has been due to a preference for woodburners as replacement appliances, which pushes up the average cost of each conversion. The replacement ratio is 72% replacement with woodburners, and 28% with heat pumps.

The Clean Heat Project has been running for three years. During the previous two years a total of 152 low income houses have been converted, bringing the overall total up to 231.



Incentive Loan Packages – Research Snapshot

Being warm is just as important as having clean air to breathe for Rotorua homeowners.

We are recommending that homeowners stay warm by investigating which clean heat appliance will suit them best.

Local Pensioner Margaret Brown supports a loan incentive “it would be good if it lets people help the environment. People should be allowed a choice of appliances, but they have to be efficient.”

Research told us people want:

- a choice of service providers
- choice of appliance
- and online application or to book an appointment.

Our loans have been designed to appeal to a range of people and are simple and easy to understand.

Regulations

We worked with the Rotorua District Council to introduce regulations to reduce and restrict domestic emissions.

The regulations are as follows:

- Rule requiring any solid fuel burner that does not meet the National Environmental Standards to be replaced when the house is sold (the point of sale rule)
- Rule to restrict the use of open fires after September 2014
- Rule to restrict solid-fuel burners in new houses to those that meet the national standards
- Rule to restrict new solid-fuel burners installed in existing houses to those that meet the national standards.

A local bylaw was identified as the most efficient and effective way to introduce and enforce regulations. Together with the Rotorua District Council, we publicly notified the Draft Air Quality Control Bylaw on 1 April 2010. An Open Day was held on 26 April for the public to discuss the bylaw and ask questions.

// **They should ban those dirty fires** //

The ban on backyard burning was not included in the proposed bylaw.

To promote awareness of the bylaw, we ran a successful media campaign.

The campaign included:

- Pamphlets (including a postage paid submission form) sent to landlords, homeowners, real estate agents and property developers
- Radio and newspaper advertising
- An Open Day held on 26 April 2010 with council staff available for one-on-one discussions about the bylaw.



There were approximately 100 visitors to the Open Day. Every person who attended the Open Day was given one-on-one information and advice, and encouraged to make a submission.

We received 110 submissions to the bylaw. Sixty-six of those submissions were substantially in favour of the bylaw. Ten submissions were neutral and 34 were against. The point of sale rule was the most controversial of the proposed bylaws.

// **Open fires are past their use-by-date
all the heat goes up the chimney** //

Following the submissions process, the bylaw was amended to address several submitter issues. The amended bylaw and a summary of submissions were presented to the Rotorua District Council deliberations meeting on 9 June 2010. The final decision on the bylaw will be made at a special meeting of the Rotorua District Council on 19 August 2010.

If adopted, administration and enforcement of the bylaw will commence during the next financial year. The Bay of Plenty Regional Council will be responsible for this.

An alternative method to introduce the regulations is through a change to the Regional Air Plan. Initial work on this was suspended in favour of bylaws. This work, including a rule to ban backyard burning, will be investigated during the next year.





Action area – Reducing industrial emissions

During the first year of implementation, we have completed a substantial amount of the work required to reduce industrial emissions. Work on this emission source was not expected to start until the second year.

Site assessments were carried out on all industrial sites in the area. The assessments included aerial photography, a site inspection, and interviews with on-site personnel. A total of 70 sites were inspected.

The second year of implementation will involve analysis of the site assessments and appropriate actions to reduce emissions from this area.

A total of 70 sites were inspected

In addition, boiler operation assessments were proposed for both McAlpines Rotorua Limited and Tachikawa Forest Products (NZ) Limited. The boiler inspection for McAlpines did not go ahead. Instead, they are proposing to install a wet scrubber to remove fine particulates from the process. This is expected to reduce their emissions.

An inspection of Tachikawa's boiler was completed in May 2010. The boiler is tuned and being operated well within consent conditions.

CASE STUDY

Clean Heat at the push of a button

Margaret Brown believes Rotorua is very cold in winter, and does everything she can to prevent her home from getting cold.

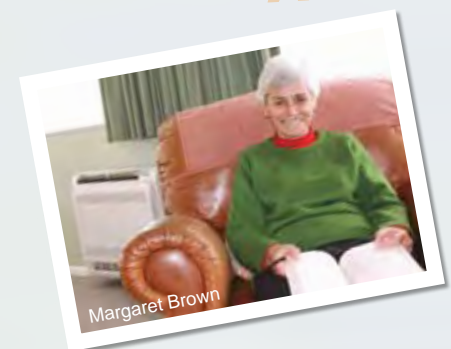
Margaret and her husband have had a range of heating appliances – gas heaters, night store heaters, electric heaters and an open fire. But while she thinks the flames of the open fire might be captivating, you have to “almost sit on them as the heat goes up the chimney.”

Recently they upgraded their inefficient open fire to a clean heat appliance. Margaret said they looked at a range of heating options and finally settled on a heat pump due to its ease of use and power efficiency.

Margaret researched the associated costs of running a heat pump and does believe it is the most cost efficient option for them. So far in comparing power bills, there has been no major change. In fact the first couple of bills were lower than the same time for the previous year.

“An open fire might be captivating, but you have to almost sit on them as the heat goes up the chimney”

Margaret believes having a warm home is very important for her health and well-being and that there is “nothing worse than sitting around freezing ... you get depressed.”



Action areas – Promote the burning of dry wood and community awareness of the air quality issue

The first year of implementation has seen two successful social marketing campaigns and several public appearances by staff to promote awareness of the air quality issue.

A Rotorua based liaison officer was employed to facilitate communications and increase community awareness of the air quality issue.

Our first social marketing campaign was the Choose Clean Home Heating promotion which ran through July to September 2009. The purpose of the campaign was to raise awareness of the air quality problem in Rotorua and to encourage simple changes that anyone could do to improve air quality.

The campaign included:

- The “Clean Heat – Clean Air – Clean Lungs” logo which has since been used in successive campaigns
- Communications via direct mail, billboards, bus stop posters, newspaper and radio advertising.



The campaign encouraged burning dry wood and discouraged burning rubbish or green waste in the back yard. The campaign also promoted long-term solutions such as installing insulation and upgrading woodburners.

A follow up survey was carried out to gauge the success of the campaign. Campaign awareness was 91%. Recall of campaign messaging was: outdoor media 44%, radio 28%, and direct mail 5.7%. Of the people questioned, 91% believed that they could do something to improve air quality. Examples quoted of how to do this included switching to better home heating, burning dry wood, and installing insulation.

This campaign was followed up in March 2010 with the Only Burn Dry Wood campaign.

The key messages of this campaign were to buy firewood early, stack it properly, and cover it well. The campaign also gave tips on good burning techniques.

The campaign included:

- A dry wood storage display at Mitre 10 Rotorua
- Advertising via newspapers, billboards and bus stop posters
- A radio promotion with a competition to win a load of dry wood
- T-shirts for councillors and staff to wear at promotion events.

The campaign was successful. Previously, 64% of people hadn't seen any marketing relating to burning dry wood, compared with 74% who had after the campaign. Prior to the campaign, people were unsure why burning dry wood was better, with only 13% stating that it was cleaner. After the campaign, this increased to 68% indicating that people understand the link with less pollution. Awareness that domestic fires are the main cause of pollution in Rotorua increased from 19% to 48%.

We also received approval from the Rotorua Air Quality Joint Committee to use an innovative way to monitor firewood quality in Rotorua. An independent laboratory will carry out moisture testing of random firewood merchants. The results will be made public through various media such as newspapers so the public can make informed decisions. In addition to the campaigns, staff have been actively engaged with the community, giving presentations to various groups including Grey Power, the Property Investors Association, and the Lions Club. Staff have appeared at public events such as night markets and on TV Rotorua.

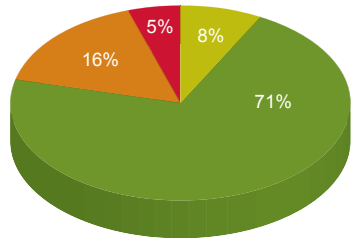
We produced four fact sheets:

- **Causes of Air Pollution** – Outlines the cause and consequences of air pollution in Rotorua
- **Clean Heat Options** – Information about pellet fires, woodburners, heat pumps, and gas heaters
- **Hot Tips for Clean Wood Burning** – Information on starting fires, burning hot and clean, dry firewood, and other tips
- **Rotorua's Air Quality: A Statistical Overview** – Outline of the science and research.

We also published six case studies. Each case study tells the story of a family and their positive experience with a new woodburner, pellet fire or heat pump.

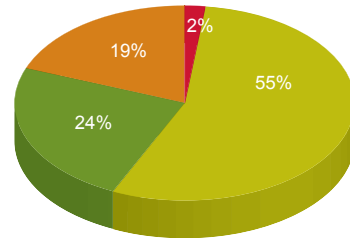


Air Quality Awareness Pre Campaign



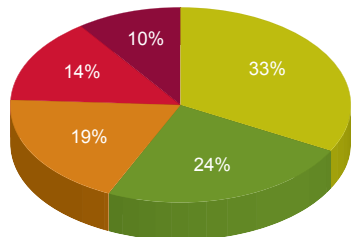
- Excellent
- Good
- Average
- Bad

Air Quality Awareness Post Campaign



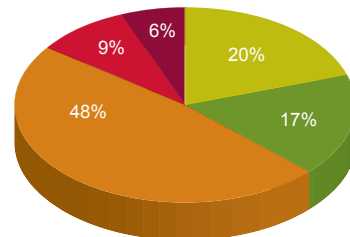
- Excellent
- Good
- Average
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Cause of Pollution Pre Campaign

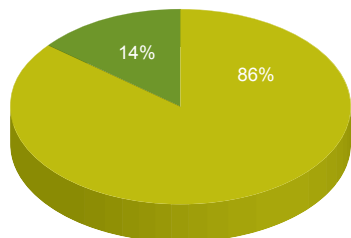


- Traffic
- Industry
- Domestic Fires
- Sulphur
- Other

Cause of Pollution Post Campaign



- Traffic
- Industry
- Domestic Fires
- Sulphur
- Other



Support for Bay of Plenty Regional Council advertising burning dry wood and its benefits?

- Yes, good idea
- No, bad idea

Action area – Infrastructure development

This action involves keeping a watching brief on projects that could reduce particulates through large scale infrastructure development.

The Bay of Connections programme is currently working on an energy strategy for the Bay of Plenty region. This strategy investigates alternative heating methods such as ground source heat pumps and multi house heating systems. The draft strategy is currently being reviewed.

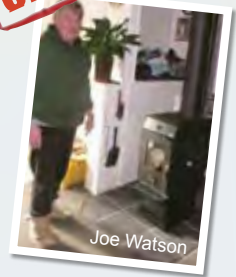
Work on the Rotorua Geothermal Regional Plan has been deferred to 2011 due to development of the 'second generation' Regional Policy Statement. This document will provide the policy framework for the Rotorua Geothermal Regional Plan, and is therefore an essential prerequisite.

Clean Heat for three generations

CASE STUDY

Living in a two-storey home with three generations made home heating important for Joe Watson.

Joe looked into many heating options, from a pellet fire to solar heating and everything in between. After much deliberation he settled on a clean heat wood burner with a wetback attached.



And he is pleased with his clean heat wood burner "It is sufficient, it's cosy, it takes the chill off and I'm happy with that."

Air pollution can affect those with respiratory illnesses

Joe is aware of Rotorua's air pollution issues caused by home heating. He is familiar with smog caused by coal fires and how air pollution can affect those with respiratory illnesses. Efficient home heating is getting more important to Joe and his wife as they get older, and as their health is deteriorating. Joe believes being warm is an important way to maintain their current health levels.

Conclusion

The first year of implementation has been successful with the scheduled action points completed.

Our focus for the second year of implementation includes the following:

- Investigating grants for low income households to convert to clean heating appliances
- Market and deliver incentive loan packages to all homeowners in the Rotorua Urban Airshed
- Address yard dust issues in the industrial area of Ngapuna
- Progress regulations (either local bylaw or Regional Air Plan change)
- Carry out independent testing on firewood supplies
- Investigate geothermal heating options
- Review progress against priorities and investigate further contingency actions if necessary.



CASE STUDY

Local pensioners hope their clean heating appliance reduces pollution

Marion & Edward Earle, can see evidence of Rotorua's pollution from the comfort of their living room. They see many fires starting around 4pm and see the haze of thick smoke settle over Rotorua before dusk. They believe "it must affect people's health. If cigarette smoke does, no doubt chimney smoke has to have some effect."

The Earle's investigated many clean heat options and settled on a pellet fire, and are delighted with its performance. "When it was installed, it was set up, and it was ready to use straight away," says Marion.

Keeping their home warm and dry and ensuring they live within the means of their pension were the key decision factors behind purchasing the pellet fire. They have purchased \$420 worth of pellets and at their current usage rate this will be more than they need to get through the cold winter months. "\$420 wouldn't buy you a winter's worth of wood, not at today's cubic rate."



It must affect your health, if cigarette smoke does, no doubt chimney smoke has to have some effect

Marion & Edward Earle are very pleased with their new clean heating appliance. They hope many other Rotorua homes follow their lead and that one day they will enjoy a clear smoke free view of Rotorua from their living room.