New Zealand’s large industrial users of fossil fuel for thermal energy, such as Fonterra, are able to transition to a low emission, 100% renewable energy future in a cost effective manner. This results in generating value for all New Zealanders and contributes to New Zealand meeting its 2030 climate change target to reduce greenhouse gas emissions by 30 percent below 2005 levels by 2030.

Identifies actions to reduce emissions, improve energy efficiency, and reduce costs.

Create action that builds the foundation for large energy users, such as Fonterra, to transition off coal and onto renewable sources of energy.

Show leadership in climate mitigation and sustainability action. Fonterra demonstrates what action could be taken by industrial users to reduce emissions.

Build resilience against rising energy and carbon costs

Create value for all New Zealanders by transitioning to a low emission future

Identifying the social good benefits associated with electrifying process heat could prompt Government and industry to consider benefits beyond GHG abatement when considering regulations and investment decisions. Engaging with large energy users in transitioning to a low emission future may generate wider benefits beyond GHG abatement when considering regulations & work programs.

Case Study: Social good benefits of electrifying process heat

To undertake an assessment and produce a report by December 2017 that summarises the public good benefits associated with electrification of processing heat. This will be used to assist the Government with considering wider benefits than GHG abatement when considering regulations & work programs. (Publically available).

Roadmaps for energy efficiency and large scale electrification of dairy processing

1. Identify a range of optimised energy efficient solutions for existing dairy plant processes and capture this in a roadmap to improve energy efficiency.
2. Assess the technical and economic feasibility of large scale dairy electrification by December 2017. This report is to assess and summarise how large scale electrification of dairy processing could occur.

Demonstration site for wood biomass co-firing at scale

To convert a Fonterra site to enable co-firing of wood biomass with coal. This work stream includes Fonterra developing a co-firing strategy for existing coal boiler assets and a position on future new coal boilers.

Demonstration site for large scale electrification

To undertake electrification of processing improvements at a Fonterra site to enable direct use of electricity to generate thermal energy at a Fonterra site.

To leverage NZ’s renewable advantage, it is proposed that Government review the barriers faced by process heat users to increase their use of renewable energy or improve the efficiency of their plant. This report would summarise these barriers and form part of an evidence base for any recommendations as part of the industrial heat plan, Process Heat in New Zealand (PHiNZ).

This would provide industry with greater certainty of costs and timeframes when considering renewable process heat investments.

Renewable electricity is a future thermal energy source and possible alternative energy source to existing emissions intensive sources. However, it is an expensive option compared with current alternatives. It is envisaged that large scale electrification of dairy processing will assist with lowering total energy use (therefore improving energy intensity), as well as reducing emissions from dairy processing (due to lower energy use, and use of electricity which is a predominantly renewable in NZ).

Now – December 2017

Building the Foundation

Steps to a lower emission future

2018-2019

To convert a Fonterra site to enable direct use of electricity to generate thermal energy at a Fonterra site.

Demonstration site for wood biomass co-firing at scale

To undertake electrification of processing improvements at a Fonterra site to enable direct use of electricity to generate thermal energy at a Fonterra site.