Ministry for the Environment
Manatū Mō Te Taiao

Memo

To: File ref:

From: Date: 26/09/03

CC:

Re: Energy savings from New Zealand MEPS for water heaters and ballasts

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Sarah,

Sorry it has taken so long to get back to you with this information, it has taken quite a while to dig it out and find an appropriate thing to compare it with.

Comparisons

Power station	**Type**	**Generating capacity MW**
Total NZ electricity generation		39,971 GWh
Huntly power station	Gas	1000 MW
Proposed Whirinaki oil fired plant (reserve generating capacity for dry years), construction cost $150million	Oil	155 MW
Geothermal stations	Geothermal	25 to 160 MW
Tararua Wind Farm	Wind	32 MW

Water heaters

Assumption	Annual energy saving above 2001 status quo at year 2012		Annual energy saving forgone		Percent energy saving forgone
	GWh	MW	GWh	MW	
All cylinders NZ A	62	21			
All low pressure NZ B or worse, mains pressure are all AUS MEPS compliant	27	9	35	12	60%
80% mains pressure are AUS MEPS compliant, no change to low pressure (i.e are NZ MEPS compliant)	42	14	20	7	33%

The energy savings forgone in year 2012 range from 7 to 12 MW, depending on the assumptions made about the standards the low pressure cylinders meet. This is about a third of a small power station.

Fluorescent lighting ballasts

Assumption	Annual energy saving above 2001 status quo at year 2012		Annual energy saving forgone over **base case**		Difference between the Aus MEPS scenario and the super normal savings scenario		Percent energy saving forgone
	GWh	MW	GWh	MW	GWh	MW	
Base case: All Ballasts B1 or better and 40% move to electronic	140	47		-			
Super-normal savings: All Ballasts B1 or better and 60% move to electronic	258	86	+118	+39	184	61	+ 84%
Aus MEPS: All Ballasts B2 or better and 20% move to electronic	74	25	-66	-22			- 47 %

The first key difference is the loss over the base case if NZ reverted to Aus MEPS – by 2012 this difference would be 22 MW or about one seventh of the proposed Whirinaki reserve plant, or equivalent to a small geothermal station. The second key difference is the loss of the projected "super savings" from early introduction of electronic ballasts. This is 61MW, equivalent to 40% of the proposed Whirinaki reserve plant, or two wind farms (yes we want more wind farms but this comparison gives an idea of scale).