

The RET's effect on Tasmania

Does the RET cost Tasmanian industrial
users \$20 million per year?

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Summary

The Renewable Energy Target (RET) has been subjected to a lot of criticism in recent years. Most of it has centred on the idea that the RET increases electricity prices. Numerous studies including the government's recent review of the RET have shown that over time it is lowering electricity prices.

But the criticism has also come from some large industrial users of electricity hoping to get an exemption from the RET. Their claims have been subjected to for less scrutiny than claims that the RET is causing significant price pressures.

This paper looks at one group of large industrial firms in Tasmania and their claims that the RET is costing them \$20 million. This claim is false. For it to be true large industrial users would have to be using one and half times more electricity than all of Tasmania. This is of course impossible.

RET assistance significantly offsets the pressure placed on industrial firms by the introduction of the RET. While rates vary annually, in 2014, Partial Exemption Certificates have covered 40 - 67 per cent of electricity costs for these businesses.

These firms have conveniently excluded this quite substantial assistance that they receive from the government. A conservative estimate of their RET liability has large industrial users in Tasmania paying less than \$8.5 million.

The paper also shows that Tasmania gains large benefits from the RET. Focusing only on the Renewable Energy Certificates (RECs) that Tasmania creates the benefit is \$125 million. This ignores investment benefits, jobs and lower wholesale electricity prices.

While advocating to government for a better deal for your industry is to be expected, these gross exaggerations do nothing to improve public debate and allow the proper evaluation of government policy.

Introduction

The Renewable Energy Target (RET) has been subjected to a lot of criticism in recent years. Most of it has centred on the idea that the RET increases electricity prices. This was claimed by the Prime Minister before the 2014 review of the RET.¹ Numerous studies have shown that over time the RET is lowering electricity prices. Even the government's own review of the RET described its effect on household electricity prices as 'small'.

Business lobby groups have also been attacking the RET and its effect on electricity prices. It is now well accepted that the RET has reduced wholesale electricity prices, and this has flowed through to retail electricity prices. Even ignoring this important effect there are some business lobby groups who have been exaggerating the cost of the RET.

This has been the case when dealing with electricity intensive industries. They are eligible for compensation under the RET scheme which dramatically reduces their RET liability, a fact that many of these organisations conveniently forget when making claims about how much the RET costs them.

This paper will examine one such claim from a group of large industrial electricity users in Tasmania.

The cost of the RET to Tasmania's large industrial users

A group of large industrial electricity users in Tasmania have started a website called 'Take a look at the big picture'. This website has claimed² that the RET is costing them \$20 million a year. The purpose of this paper is to investigate whether this \$20 million figure is likely to be correct – is it likely that these users incur a \$20 million RET liability per year?

The group making the claim includes four large energy users:

- Norske Skog, which manufactures newsprint from its Boyer mill
- Nyrstar, which operates a zinc smelter in Tasmania
- Grange Resources, which is an integrated iron ore pellet producer
- Bell Bay Aluminium, which operates an aluminium smelter in Tasmania.

The \$20 million claim

The claims made on the website are extremely vague, saying, for example, that: "the net cost impact of RET (sic) on Tasmania's Big Picture industries was around \$20 million per annum".³ The four companies listed above appear to be the only companies involved with the website at the time the \$20 million figure was claimed. It should be noted that the website does not fully explain who the 'big picture' industries are.

Australian Energy Market Operator (AEMO) data⁴ allows us to calculate that the top four industrial electricity users in Tasmania made up about 93% of all industrial electricity used. The top four industrial users are Bell Bay Aluminium, Nyrstar, Norske Skog and TEMCO. This means that three of these four large industrial users are part of the \$20 million claim. The other firm is Grange Resources, which is the fifth largest industrial electricity user.

¹ Edis (2014) *Old Abbott and Newman's RET confusion*

² Take a look at the big picture (2014a) *Renewable Energy Target Damaging Tasmanian Industry*

³ Take a look at the big picture (2014a)

⁴ AEMO (2014a) *2014 Forecasting Methodology Information Paper*

Australian Energy Market Operator (AEMO) data show that there are 14 large industrial users in Tasmania.⁵ This group of 14 used 5,756 gigawatt hours (GWh) per year or approximately 5.8 terawatt hours (TWh). While the website appears only to attribute the \$20 million RET liability to the abovementioned four companies, this paper assumes that the \$20 million RET liability accrues to all 14 industrial users, to simplify the issue. The effect of this assumption is discussed below under the heading 'Assumptions'.

The RET assistance program

To test the credibility of the \$20 million claim we calculate how much electricity these industrial users would have to consume if they were to have a RET liability of \$20 million. To do this we need to examine the assistance program that is provided to Emissions-Intensive Trade-Exposed (EITE) companies under the RET legislation.

All of the largest four industrial electricity users are intensive users of electricity and all four receive assistance under the RET legislation.⁶ This assistance comes in the form of Partial Exemption Certificates (PECs).

PECs are certificates issued by the Clean Energy Regulator and entitle a firm's energy supplier to be exempt from the cost of the RET, which the electricity supplier then passes on to the firm. There are a number of different products or 'activities' that are eligible for assistance under the legislation. These activities are broken up into two rates of assistance – highly emissions intensive and moderately emissions intensive.

Three of the four largest industrial electricity users produce products that are eligible for assistance at the highly emissions intensive rate. These are Norske Skog, Nystar and Bell Bay Aluminium. The remaining producer, TEMCO, produces a product that is eligible for assistance at the moderately emissions intensive rate.

The rate of assistance changes each year since the percentage of electricity that needs to be purchased from renewable sources also changes each year. In 2014 the effective rates of assistance for highly emissions intensive activities was 67.58 per cent and the effective rates of assistance for moderately emissions intensive activities was 45.05 per cent.⁷

The clean energy regulator also provides the volume-weighted average market price for renewable energy certificates (RECs) each year. For 2014 the average price was \$35.24.⁸ Each REC covers one megawatt hours (MWh) of electricity.

The clean energy regulator also provides the renewable power percentage, which is the percentage of electricity that needs to come from renewable sources each year. In 2014 it was 9.87 per cent.⁹

While all four of the largest industrial users of electricity receive assistance, some of the other 14 industrial users also receive assistance. For example, Grange Resources receives assistance for two of its products – iron ore pellets and magnetite concentrate. Both of these activities receive assistance at the moderately intensive rate. Another company, Tasmania Mines Limited, also receives assistance for magnetite concentrate.

⁵ AEMO (2014a)

⁶ Clean Energy Regulator (2014b) *PECs Issued*

⁷ Commonwealth Government of Australia (2014) *Renewable Energy (Electricity) Regulations 2001*

⁸ Clean Energy Regulator (2014c) *Volume weighted average market price for a renewable energy certificate (REC) / large-scale generation certificate (LGC)*

⁹ Clean Energy Regulator (2014a) *About the renewable power percentage*

It is not possible to separate these companies from the remaining 10 industrial users that make up seven per cent of industrial electricity consumption. This paper then makes the assumption that no companies outside the top four receive any assistance. The effect of this assumption is discussed below under the heading 'Assumptions'.

In order to make the estimation we need to know what proportion of the electricity was used in a highly emissions intensive activity and what proportion was used in a moderately emissions intensive activity. While three of the four companies are undertaking a highly emissions intensive activity and only one is undertaking a moderately emissions intensive activity, this does not mean that three-quarters of the electricity is highly emissions intensive and one quarter is moderately emissions intensive.

This is because the highly emissions intensive activities are likely to use more electricity than the moderately emissions intensive activity. In particular, aluminium smelting at Bell Bay is likely to use significantly more electricity than the other three activities. Aluminium smelting is the most electricity-intensive of all the activities considered under the assistance program.

Since the exact split of electricity is unknown we have calculated the amount of electricity if it were all highly emissions intensive and also if it were all moderately emissions intensive. This gives us a range into which the true answer will fall – it is likely that the true answer will be far closer to the highly emissions intensive number than the moderately emissions intensive number.

Assuming all electricity is used in moderately emissions intensive activities

At a REC price of \$35.24, a \$20 million RET liability must have been for 567,537 RECs (20 million / \$35.24).

We then split the electricity users into two groups. Those that receive assistance (93 per cent) and those that don't (seven per cent). Those that receive assistance make up 527,809 RECs ($567,537 * 0.93$). And those that don't receive assistance make up 39,728 RECs ($567,537 * 0.07$).

If the effective assistance rate for moderately emissions intensive activity is 45.05 per cent then the firms must have been liable for 54.95 per cent (100 per cent – 45.05 per cent)

So the top four firms' total liability, excluding the assistance, must be 960,526 RECs ($527,809 * (1/0.5495)$)

Each REC represents 1 MWh of electricity so 960,526 RECs must equal 960,526 MWh.

960,526 MWh must represent 9.87 per cent of their electricity use, as this is the renewable power percentage.

This means total electricity use must be 9,731,773 MWh ($960,526 * (1/0.0987)$)

This is the electricity use for the firms receiving assistance. For the firms not receiving assistance, 39,728 must represent 9.87 per cent of their electricity use. So total electricity use is 402,508 MWh.

So total electricity use is 10,134,286 MWh. This is equivalent to approximately 10.1 TWh.

Assuming all electricity is used in highly emissions intensive activities

Here we repeat the above process using the highly emissions intensive rate of assistance.

At a REC price of \$35.24 a \$20 million RET liability must have been for 567,537 RECs (20 million / \$35.24).

We then split the electricity users into two groups. Those that receive assistance (93 per cent) and those that don't (seven per cent). Those that receive assistance make up 527,809 RECs ($567,537 * 0.93$). And those that don't receive assistance make up 39,728 RECs ($567,537 * 0.07$).

If the effective assistance rate for highly emissions intensive activity is 67.58 per cent then the firms must have been liable for 32.42 per cent (100 per cent – 67.58 per cent).

So the top four firms' total liability, excluding the assistance, must be 1,628,036 RECs ($527,809 * (1/0.3242)$).

Each REC represents 1 MWh of electricity so 1,628,036 RECs must equal 1,628,036 MWh.

1,628,036 MWh must represent 9.87 per cent of their electricity use as this is the renewable power percentage.

This means total electricity use must be 16,494,793 MWh ($1,628,036 * (1/0.0987)$).

This is the electricity use for the firms receiving assistance. For the firms not receiving assistance, 39,728 must represent 9.87 per cent of their electricity use. So total electricity use is 402,508 MWh.

So total electricity use is 16,897,302 MWh. This is equivalent to approximately 16.9 TWh.

Estimating within the range

The range of possible electricity use is therefore between 10.1 TWh and 16.9 TWh. Three users undertook an activity that received assistance at the highly emissions intensive rate and one undertook an activity that received assistance at the moderately emissions intensive rate. If we assign three quarters of the electricity to highly emissions intensive and one quarter to moderately emissions intensive then we get a figure of 15,206,548 MWh or approximately 15.2 TWh.

Using this method to estimate the point within the range will significantly underestimate the amount of electricity, since the three highly emissions intensive activities are likely to use significantly more electricity than the moderately emissions intensive activity. The effect of this assumption is discussed in more detail below under the heading 'Assumptions'.

That's an enormous amount of electricity

15.2 TWh needs to be put into context. According to AEMO statistics, the whole of Tasmania including all residential, business and unmetered electricity consumed in 2012-13 was 10.1 TWh.¹⁰

¹⁰ AEMO (2014b) 2014 National Electricity Forecasting Report (NEFR)

This means that the claim by those Tasmanian industries that the RET costs them \$20 million per year is spurious, since this would mean that these industrial users by themselves are consuming about one and a half times more electricity than the entire state, which is of course impossible.

Further AEMO statistics show that large industrial users, of which there are 14, used 5,756 GWh or approximately 5.8 TWh.¹¹ This means that these industrial users are claiming they use three times as much electricity as is used by all Tasmanian industrial users. This is also impossible.

Where did the \$20 million figure come from?

It is impossible to know how the companies came up with the exaggerated figure of \$20 million. There may have been no methodology behind the figure at all. But it is interesting to note that if no assistance of any kind was offered to large Tasmanian industrial users then their RET liability would be approximately \$20 million.

The complex nature of the RET assistance scheme makes it easier for critics of the scheme to ignore its benefits. This is possibly what the so called big picture industries were trying to achieve. It is also possible that the assistance scheme simply confused whoever was charged with calculating the big picture industries RET liability and they were unable to correctly calculate the liability.

The benefits of the RET to Tasmania

The RET is often discussed in terms of its financial costs – but it is important to remember that it also creates financial benefits. The main benefit that the RET provides is in the form of Renewable Energy Certificates that are created when renewable energy is generated. The more renewable energy that is generated the more certificates are created.

There are a number of other benefits that the RET generates such as employment and investment in the renewable energy industry and the decrease in the wholesale price of electricity. This paper will focus only on the benefit associated with the creation of RECs.

Tasmania has seen a large expansion of renewable energy under the RET. Despite its relative small size, Tasmania produces the second largest number of Large-scale Generation Certificates (LGCs).¹² Only South Australia produced more LGCs in 2013. Table 1 shows the number of LGCs produced by each state in 2013.

¹¹ AEMO (2014a)

¹² LGCs are the RECs created by the large-scale Renewable Energy Target.

Table 1 – Large-scale generation certificates created by state

State	Number of LGCs produced in 2013	Percentage of LGCs produced in 2013
South Australia	3,508,179	23%
Tasmania	3,242,455	21%
New South Wales	2,679,731	18%
Victoria	2,353,995	15%
Queensland	1,754,208	11%
Western Australia	1,627,014	11%
Australian Capital Territory	100,308	0.7%
Northern Territory	10,963	0.07%
Total	15,276,853	

Source: REC Registry

The value of these LGCs can be calculated by multiplying the number of LGCs by their average price. In 2013, the volume-weighted average market price was \$38.69.¹³ This means the total value of the LGCs produced by Tasmania is \$125 million.

While Tasmania produces a disproportionately large number of LGCs compared to the rest of Australia, as a proportion it consumes far less electricity. Tasmania consumes about five per cent of Australia's electricity while it creates about 21 per cent of Australia's LGCs.

As discussed above, more than half of Tasmania's electricity is consumed by large industrial users (6,065,000 MWh out of 10,098,600 MWh or 60 per cent). If we make the same assumptions as we made above, that:

- 93 per cent of this liability is covered by assistance
- one quarter is moderately emissions intensive
- three quarters are highly emissions intensive
- the remaining seven per cent of large industrial users receives no assistance

Then an estimate for their RET liability is \$8.5 million per year. The remaining electricity (4,033,600 MWh) attracts a RET liability of \$14 million per year. This takes Tasmania's total RET liability to \$22.5 million per year.

This means that while the total benefit of the RET is \$125 million, the total cost is \$22.5 million. This leaves a net benefit of more than \$100 million per year.

Assumptions

There are a number of important caveats in the calculations of these figures. These are listed below. The result of some of these assumptions will be to overstate the total electricity amount and the result of other assumptions will be to understate the total electricity amount. Each assumption is discussed below, as well as its likely effect on the total figure.

¹³ Clean Energy Regulator (2014c)

These assumptions could easily be done away with if the companies involved in the \$20 million claim were to provide the total amount of electricity they have used and the number of PECs they were allocated. From this information an accurate figure of the cost of the RET to Tasmania's industrial users can be calculated.

The critique made in this paper is based on estimating the quantity of electricity the large industrial users must consume each year to incur a liability of \$20 million. It has found that the quantity of electricity that the large industrial users would have to consume to get a RET liability of that size is greater than total electricity consumption in Tasmania.

The claims made by the 'big picture industries' are extremely vague. We are told on their website that "the net cost impact of RET (sic) on Tasmania's Big Picture industries was around \$20 million per annum".¹⁴ It appears that at the time this declaration was made there were only the four founding members of the so-called big picture industries.¹⁵ Despite this fact, we have assumed that the \$20 million RET liability is for all 14 industrial electricity users in Tasmania. This assumption is likely to understate the total electricity figure.

The Clean Energy Regulator calculates assistance on the electricity used in an activity. This includes only the electricity used to create the product and not electricity used in supporting functions – for example it does not include electricity used in head office functions, packaging etc. This means that the assistance received is not calculated on the total amount of electricity the firm uses. It should be noted that these companies are engaged in activities that use a lot of electricity and the electricity use not covered in the calculation for assistance is likely to be a tiny fraction of total electricity use. This assumption is likely to overstate the total electricity use.

The price of RECs used in these calculations is the volume-weighted average price calculated by the Clean Energy Regulator. As with any average price, some companies will have paid more than the average and some companies will have paid less than the average. Given the number of RECs required to reach the \$20 million figure and the fact that a number of different companies are involved in purchasing them, it is highly likely that the actual average price paid by the Tasmanian companies would be very close to the average price calculated by the Clean Energy Regulator. Any difference is likely to be small. This assumption could overstate or understate the total electricity amount but only by a small degree.

The price of RECs that is used is assumed to be the average price of LGCs. The RET liability the companies face can also be covered by Small-scale Renewable Energy Scheme (SRES) certificates, called Small Technology Certificates (STCs). These are sold at a fixed price on the government's exchange of \$40 per certificate. Note that STCs can be exchanged privately at different rates. While it is likely that these large users of electricity would have secured the cheaper LGCs it is possible that they had to buy the slightly more expensive STCs. This assumption could overstate the total amount of electricity.

The calculations assume that the whole value of the PEC is passed onto the electricity consumer. While PECs are issued to the electricity consumer they are passed onto their electricity retailer in exchange for a lower electricity price. The final discount is a matter of negotiation between the consumer and retailer. Given the amount of electricity that is used by the companies in this calculation it is likely that they would be able to negotiate a favourable deal for themselves. If they have failed to do this then the assumption may overstate the total amount of electricity.

¹⁴ Take a look at the big picture (2014a)

¹⁵ Take a look at the big picture (2014b) *Take a look at the big picture!*

The calculation assumes that none of the large industrial users apart from the largest four receive any assistance. This is not the case. At least two of the remaining industrial users do – Grange Resources and Tasmania Mines Limited. This assumption is likely to understate the total electricity figure.

The calculation also assumes that each of the four companies that are receiving assistance are using an equal amount of electricity. That is, three quarters of the electricity is being assigned to highly emissions intensive activities and one quarter is being assigned to a moderately emissions intensive activity. This is in line with the fact that three of the companies get highly emissions intensive assistance and one gets moderately emissions intensive assistance. This is highly unlikely to be the case. The Bell Bay aluminium smelter is likely to make up about half of the electricity used by the four companies. Nyrstar zinc smelter is also likely to use significantly more than the remaining two companies. The company using the least amount of electricity is likely to be TEMCO, which is getting moderately emissions intensive assistance. This assumption will have a significant impact on understating the total amount of electricity.

Some of the assumptions listed above may overstate the electricity total and some may understate the total. Practically none of the assumptions are likely to have a material impact on the total, with the exception of the assumption that divides electricity use evenly between the four companies receiving assistance. This means that the electricity total presented in this paper is likely to be an underestimate. This makes the \$20 million claim even less likely.

Conclusion

Tasmania is a big winner from the RET and this is without considering the benefits of lower wholesale electricity prices that the RET has created. While there are some costs from the RET, these are dwarfed by the benefits that exceed \$100 million per year.

The RET scheme and the compensation delivered under the scheme to Emissions-Intensive Trade-Exposed (EITE) industries is fairly complex. This has allowed a situation where those who are opposed to the scheme are able to make claims that do not hold up to scrutiny.

Claims made by self-interested lobby groups such as ‘Take a look at the big picture’ always need to be subjected to scrutiny. In the case of the \$20 million claim it can be shown to be a large exaggeration.

A number of assumptions need to be made to calculate the amount of electricity required for a \$20 million RET liability. When taken as a whole these assumptions are likely to underestimate the amount of electricity. This then acts to make the \$20 million less plausible.

The industries involved could of course clear up any confusion by publically announcing how much electricity they all use and the number of PECs they have been issued. With that information it would be very simple to calculate their RET liability. Until they do this the \$20 million claim should be treated with a healthy dose of scepticism.

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