Case Study

The Renewable Energy Target (RET) Scheme: A renewable energy certificate trading platform

Australia

October 2014

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Quick facts	
Zone	National territory
Programme started	2001
Topic	Renewable Energy
Implementing Agency	Clean Energy Regulator

Background

Greenhouse gas emissions from electricity generation account for roughly one third of Australia's annual emissions, and stem from the country's heavy economic reliance on coal and natural gas[1]. In 2001, the Australian federal government introduced the Renewable Energy Target (RET) Scheme to curb these emissions and encourage the development and sustainability of the renewable energy sector. The scheme, based on a renewable energy certificate trading platform, is primarily under the charge of the Clean Energy Regulator (CER)[a]. The CER administers the scheme, managing the trading platform, while the Department of the Environment plays a collaborative role, providing policy advice and implementation support[2].

The scheme aims to divest the country's electrical grid away from coal-powered electrical generation by subsidising the adoption of renewable energy and obligating its use by electricity retailers.

[a] The Clean Energy Regulator is a federal body responsible for administration of various carbon emissions and renewable energy related legislation

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Since its inception, this scheme has had considerable success in achieving its aims, prompting its expansion in 2009. The scheme stipulates that by 2020, renewable energy sources should account for 20 *per cent* of the country's electrical supply. The initial two *per cent* renewable energy target was increased to twenty *per cent* in 2009, translating into a fixed target of 41,000 gigawatt hours per annum by 2020 (table 1)[3].

Table 1: Annual renewable energy certificate purchase targets, 2011-2030.

Year	Target (GWh)
2011	10,400
2012	16,763
2013	19,088
2014	16,950
2015	18,850
2016	21,431
2017	26,031
2018	30,631
2019	35,231
2020	41,850
2021-2023	41,000

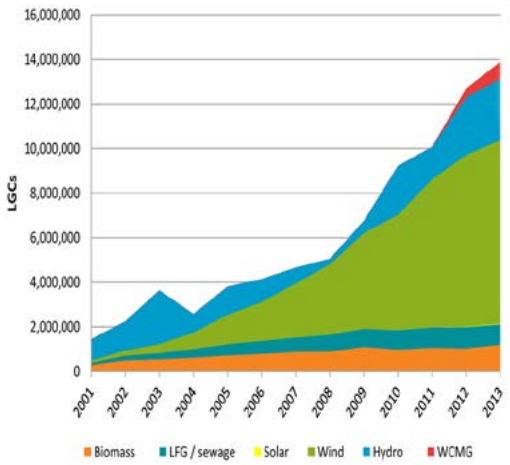
Source: Clean Energy Regulator, 2012 About the Renewable Energy Target

The Project

Certificates are based on the amount of electricity in megawatt hours generated or displaced by accredited renewable energy sources. Renewable energy power stations and owners of small-scale renewable energy systems are awarded certificates. Liable entities (typically electricity retailers) are legally obligated to buy a set amount of these certificates per year. These certificates are surrendered to the RET, demonstrating the entities' compliance with the scheme.

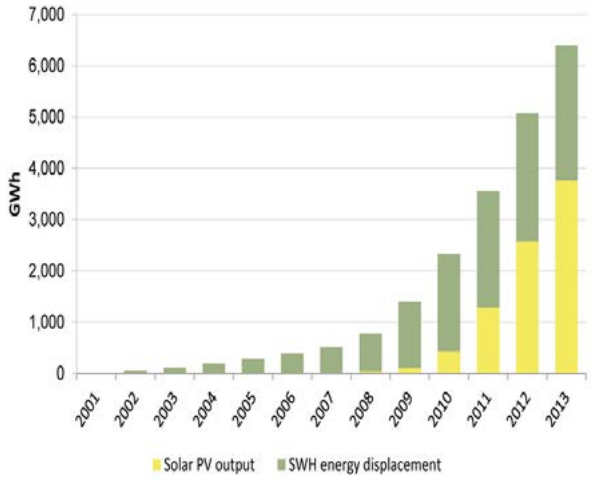
As of January 2011, the RET has been split into two schemes – (a) the Large-scale Renewable Energy Target (LRET) and (b) the Small-scale Renewable Energy Target (SRET). The LRET and SRET schemes exist within individual markets, with separate obligations for liable entities. These certificates are not interchangeable, thus creating a legislated demand within both markets. Certificates are sold and bought in their respective markets where prices vary based on supply and demand[2]. Both markets have seen substantial growth since 2001 (see figure 1 and figure 2).

Figure 1: Large-scale renewable energy certificates created by fuel source, 2001-2013



Source: Clean Energy Regulator, Register of Large-scale Generation Certificates, current at 3 June 2014.

Figure 2: Historical generation and displacement from small-scale solar power and solar water heaters



Source: Australian Government, Renewable Energy Target Scheme: Report of the Expert Panel.

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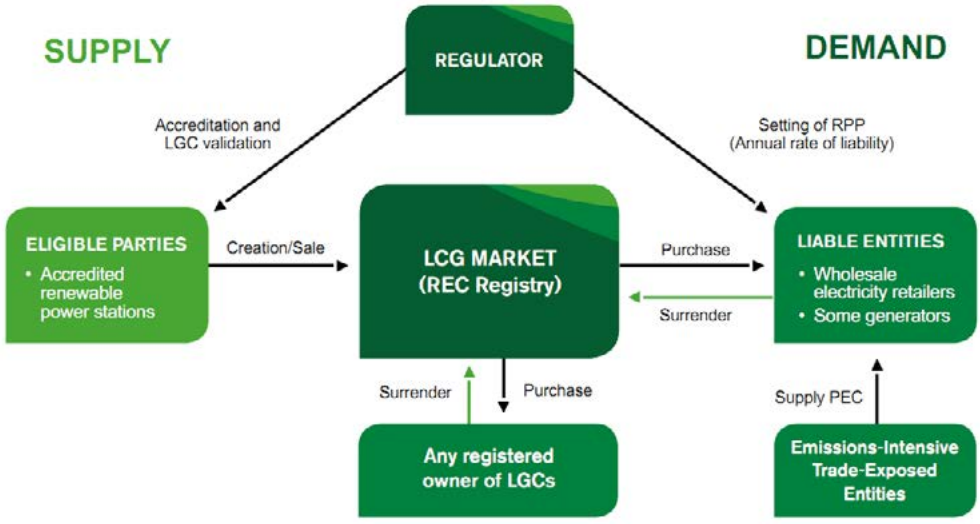
Certificates are managed through an online platform which allows certificate creation, registration and purchasing. Liable entities are required to buy a set amount of renewable energy every year, as are determined annually relative to the anual target (table 1). If a liable entity fails to surrender the required number of certificates, they are charged the difference of certificates at a set rate, per certificate. All participants in the registry (producers and consumers) can be audited at any time[2].

THE LRET

For LRET certificate eligibility, power stations must generate power from approved renewable energy sources. Power stations must undergo environmental assessments for accreditation, abiding by federal and state/territorial requirements, and must provide annual compliance statements thereafter. Currently there are fifteen types of renewable energy sources used in accredited power stations, the most significant of which are wind, solar, hydro, biomass, and landfill gas. As of July 2014, 416 power stations were accredited under the LRET scheme, while large-scale renewable energy production had grown roughly 5,100 MW to 13,100 MW from the 2001 baseline[4]. The large-scale certificate market is demonstrated in figure 3.

Figure 3: The Large-scale Renewable Energy Target explained



Source: Australian Government, 2012, About the Renewable Energy Target

THE SRET

The SRET scheme provides a financial incentive for the installation of privately owned small-scale renewable energy systems. Owners must provide documentation of compliance with the legislated system requirements for the creation of certificates. Certificates are generated from eligible solar water heaters, heat pumps, and small-scale solar panels, wind and hydro systems[2]. Since the establishment of the SRET, over two million small-scale renewable energy systems have been installed, primarily solar systems. The SRET scheme has seen over 110 million certificates created, accounting for $4.2 billion in traded certificates[4]. The small-scale certificate market is demonstrated in figure 4.

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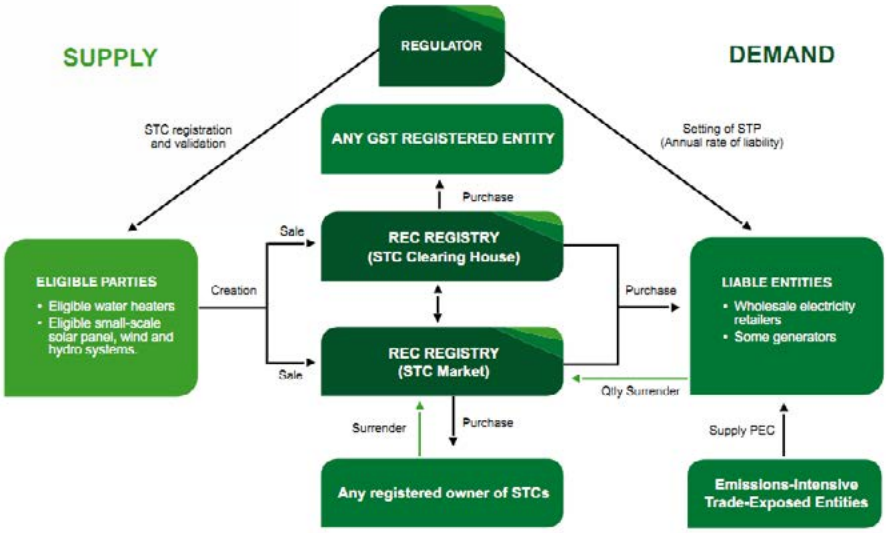
Figure 4: The Small-scale Technology Certificate (STC) market explained



Source: Australian Government, 2012, About the Renewable Energy Target

Impacts

The scheme has been successful in stimulating growth of the renewable energy sector, investment in renewable energy power stations and adoption of small-scale renewable energy systems. Of the ninety liable entities operating in 2013, 99.97 *per cent* small-scale certificate compliance and 99.98 *per cent* large-scale certificate compliance was achieved[3]. Renewable electricity generation has nearly double as a result of the scheme[1], while wind and solar power usage have increased 400 *per cent*. The RET scheme is also credited with supporting 21,000 jobs and having mitigated over of 20 million tonnes of carbon. Some regions of the country, such as Adelaide, have already exceeded the 2020 renewables target[4].

2013 marked the greatest national annual carbon dioxide reduction in the past 24 years, driven by energy provision changes in the electricity sector. Electricity sector emissions fell 5 *per cent* over the course of the year, while all but one other industry's emissions levels rose[1]. This reduction is likely the compounding result of a number of initiatives, however, the RET scheme has been credited with playing a major role.

While the success of the program is evident, the future of the program is in question as the RET is currently under federal review. A review report recently commissioned by the federal government has suggested the scaling back of the program, citing the scheme as 'a high cost approach to reducing emissions'[4]. In contrast, however, independent studies led by the Climate Institute suggest that there would be no decline in electricity pricing with the weakening of the RET scheme, while investment in the renewable energy sector would likely significantly decline[5].

As of October 2014, the future of the program is yet to be decided, however, the reduction or abolishment of the RET scheme would follow suit with the recent decision to abolish the Carbon Tax Emissions Trading Scheme. Such actions would likely significantly reduce investment and research in the renewable energy sector, adoption of renewable energy technologies, and increase electricity sector emissions.

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References

The following documents informed the development of this paper:

[1]Australian Government, 2014, Quarterly Update of Australia's National Greenhouse Gas Inventory: December 2013, Commonwealth of Australia, http://www.environment.gov.au/system/files/resources/d616342d-775f-4115-bcfa-2816a1da77bf/files/nggi-quarterly-update-dec13.pdf

[2]Clean Energy Regulator, 2012, About the Renewable Energy Target, Australian Government, Canberra.

[3]Clean Energy Regulator, 2014, Renewable Energy Target 2013 Administrative Report, Australian Government, http://www.cleanenergyregulator.gov.au/About-us/Governance-accountability-and-reporting/administrative-reports/RET-2013-Administrative-Report/Documents/Renewable%20Energy%20Target%202013%20Administrative%20Report.pdf

[4]Australian Government, 2014, Renewable Energy Target Scheme: Report of the Expert Panel, Commonwealth of Australia, http://retreview.dpmc.gov.au/sites/default/files/files/RET_Review_Report.pdf

[5]The Climate Institute, 2014, Who Really Benefits from Reducing the Renewable Energy Target? The Climate Institute, Australian Conservation Foundation, and WWF-Australia, http://www.climateinstitute.org.au/verve/_resources/TCI_WWF_ACF_Policybrief_WhoReallyBenefitsFromReducingTheRET_file.pdf

Photographic Source

Mohammad Afshar. Retrieved from: https://www.flickr.com/photos/mohammadafshar/9571051345