

Senate Standing Committee on Environment and Communications
Legislation Committee
Answers to questions on notice
Environment portfolio

Question No: 08
Hearing: Budget Estimates
Outcome: Outcome 2
Program: Domestic Emissions Reduction Division (DERD)
Topic: Cost of Abatement for the Renewable Energy Target
Hansard Page: 68-69
Question Date: 05 May 2016
Question Type: Spoken

Senator Paterson, James asked: Can you describe some of the measures that were successful under the completed ERF auction?

Ms Wilson: ... I will take on notice all the 33 methods that we have available, and how many of those methods have we got contracts or projects registered for. I can describe in detail how those methods work, or I can take all that on notice.

I do have a table that has some of the information about registered projects and contracted projects. Another method that has a lot of projects that have been successful at all three auctions is savannah fire management, which basically aims to reduce emissions from burning earlier in the season. I will take all this on notice and I will provide you with a good table that has every single method, exactly what each of these methods does, the number of projects registered under each method and the number of projects contracted under each method.

Answer:

Information on the 33 methods available under the Emissions Reduction Fund is at **Attachment A**. A description of each method and the number of registered and contracted projects (as of 5 May 2016) under each method is provided.

Emissions Reduction Fund Methods (as at 5 May 2016)

No.	Method	Description	Projects
Agriculture			
1	Beef cattle herd management	Projects reduce livestock methane emissions from beef cattle farming. Improved breeding and feeding practices lower the average age of the herd and produce higher weight gain relative to age.	<u>Registered:</u> 3 <u>Contracted:</u> 1
2	Destruction of methane from piggeries using engineered biodigesters	Projects reduce methane emissions from piggery manure by capturing and combusting methane in an engineered biodigester. The methane can be used to generate electricity or burnt off using a flare. An engineered biodigester is specifically designed for this purpose.	<u>Registered:</u> 1 <u>Contracted:</u> 1
3	Destruction of methane generated from dairy manure in covered anaerobic ponds	Projects reduce emissions from dairy manure by covering effluent ponds and either using the captured methane to generate electricity or burning it off using a flare.	<u>Registered:</u> 0 <u>Contracted:</u> 0
4	Destruction of methane generated from manure in piggeries	Projects reduce emissions from piggery manure by covering effluent lagoons and either using the captured biogas to generate electricity or burning it off using a flare.	<u>Registered:</u> 11 <u>Contracted:</u> 8
5	Fertiliser use efficiency in irrigated cotton	Projects reduce emissions by improving the efficiency of synthetic fertiliser use in irrigated cotton. This involves undertaking activities that produce a greater yield of cotton per tonne of fertiliser used.	<u>Registered:</u> 0 <u>Contracted:</u> 0
6	Reducing greenhouse gas emissions in beef cattle through feeding nitrate containing supplements	Projects reduce methane emissions from beef cattle by providing a nitrate supplement to cattle. Urea is often used as a feed supplement to increase the amount of protein in the diet of cattle. When some or all of the urea is replaced by nitrate supplements, the cattle produce less methane emissions as they digest their food.	<u>Registered:</u> 0 <u>Contracted:</u> 0

No.	Method	Description	Projects
7	Reducing greenhouse gas emissions in milking cows through feeding dietary additives	Projects reduce emissions from dairy cows by adding oil supplements to cattle feed. Increasing the fat content of a milking cow's diet reduces the emissions that result from the digestion process.	<u>Registered</u> : 0 <u>Contracted</u> : 0
8	Estimating sequestration of carbon in soil using default values	Projects store carbon in the soil through changed land management. This method uses modelled estimates of abatement by increasing inputs of carbon to the soil or reducing the loss of soil carbon. This is achieved by: <ul style="list-style-type: none"> • permanently converting land from annual cropping to pasture • retaining crop residue that was previously removed through burning or baling in field, or • increasing biomass yields through inputs such as fertiliser, lime and water. 	<u>Registered</u> : 0 <u>Contracted</u> : 0
9	Sequestering carbon in soils in grazing systems	Projects store carbon in the soil through changed land management in grazing systems. This method uses direct measurement of changes in soil carbon due to activities that include: <ul style="list-style-type: none"> • converting cropland to permanent pasture • rejuvenating pastures, or • changing grazing patterns. 	<u>Registered</u> : 17 <u>Contracted</u> : 7
Energy Efficiency			
10	Aggregated small energy users	Projects reduce the energy use of large groups of households or small businesses by rolling out energy saving technologies and implementing behaviour change programmes.	<u>Registered</u> : 1 <u>Contracted</u> : 0

No.	Method	Description	Projects
11	Commercial and public lighting	Projects reduce energy use by replacing existing commercial, industrial and public lighting (including street lighting) with high efficiency lighting and/or lighting controls.	<u>Registered:</u> 9 <u>Contracted:</u> 2
12	Commercial building energy efficiency	Projects reduce the amount of energy used by offices, shopping centres or hotels. Activities include replacing heating and air-conditioning systems with more efficient models, installing energy efficient LED lighting, and upgrading glazing and insulation.	<u>Registered:</u> 4 <u>Contracted:</u> 0
13	High efficiency commercial appliances	Projects reduce energy use by installing high efficiency air conditioners, close control air conditioners, liquid chilling packages or refrigerated display cabinets in commercial or industrial buildings.	<u>Registered:</u> 1 <u>Contracted:</u> 0
14	Industrial electricity and fuel efficiency	Projects improve the energy efficiency of commercial or industrial equipment. The method is best suited to large projects as it requires statistical approaches to calculate emissions reductions. Eligible activities include upgrading equipment such as industrial boilers and pumping systems and converting equipment to operate on lower emissions fuel (e.g., switching from diesel to gas).	<u>Registered:</u> 19 <u>Contracted:</u> 6
15	Refrigeration and ventilation fans	Projects reduce energy use by installing highly efficient fans. Potential applications include refrigerated display cabinets, freezer cabinets, cold storage warehouses and ventilation systems in commercial or industrial buildings.	<u>Registered:</u> 1 <u>Contracted:</u> 0
Facilities			
16	Facilities	Projects reduce emissions through improvements in the level of emissions per unit of output at a facility (also referred to as emissions intensity). This method is designed for use by large facilities that report under the National Greenhouse and Energy Reporting scheme.	<u>Registered:</u> 0 <u>Contracted:</u> 0

No.	Method	Description	Projects
Mining, Oil and Gas			
17	Coal mine waste gas	<p>Projects reduce fugitive emissions of methane from underground coal mines by combustion. When methane is combusted it produces energy and carbon dioxide exhaust gas. Emissions are reduced because of the high global warming potential of methane.</p> <p>When coal mine waste gas is combusted in an electricity production device, the project has the additional abatement effect of displacing electricity produced by other generators on the electricity network. Projects may be credited both for methane destruction and for electricity displacement.</p>	<p><u>Registered:</u> 10</p> <p><u>Contracted:</u> 2</p>
18	Oil and gas fugitives	<p>Projects reduce fugitive emissions from oil and gas facilities, and pipelines through the installation of gas capture equipment. The equipment re-routes fugitive emissions of methane to a new or existing flare device for combustion. (Combustion of methane, produces energy and converts the gas to carbon dioxide – overall carbon dioxide equivalent emissions are reduced).</p>	<p><u>Registered:</u> 0</p> <p><u>Contracted:</u> 0</p>
Transport			
19	Aviation	<p>Projects reduce fuel-related emissions from airlines through activities such as upgrading existing planes, switching to biofuels and improving operational practices.</p>	<p><u>Registered:</u> 1</p> <p><u>Contracted:</u> 0</p>
20	Land and sea transport	<p>Projects reduce fuel-related emissions from road, rail and sea transport through activities such as replacing or modifying existing vehicles, changing fuel sources, or improving operational practices.</p>	<p><u>Registered:</u> 6</p> <p><u>Contracted:</u> 3</p>

No.	Method	Description	Projects
Vegetation Management			
21	Avoided deforestation 1.1	Projects avoid emissions by not clearing an area of native forest where a permit to clear was granted prior to 2010. Projects also store carbon (sequestration) in the trees as they grow.	<u>Registered:</u> 56 <u>Contracted:</u> 52
22	Designated Verified Carbon Standard projects	Projects store carbon (sequestration) through improved forest management. This method only applies to offsets projects that were previously validated under the Verified Carbon Standard (VCS) and implemented under the VCS methodology <i>VM0010-Methodology for improved forest management: Conversion from logged to protected forest.</i>	<u>Registered:</u> 2 <u>Contracted:</u> 1
23	Measurement based methods for new farm forestry plantations	Projects store carbon (sequestration) through establishment of small scale harvestable forests on land that has previously been used for grazing or cropping.	<u>Registered:</u> 0 <u>Contracted:</u> 0
24	Reforestation and afforestation 2.0	Projects store carbon (sequestration) by permanently planting a new forest (afforestation) or re-establishing a depleted forest (reforestation) on land previously used for grazing or cropping. This method differs from environmental planting methods in that carbon is estimated through tree measurement rather than modelling and any species may be planted (other than declared weeds).	<u>Registered:</u> 22 <u>Contracted:</u> 5
25	Reforestation by environmental or mallee plantings – FullCAM	Projects store carbon (sequestration) by permanently planting native species to achieve forest cover. Differs from afforestation/reforestation in that carbon is estimated through modelling rather than measurement and only native species may be planted.	<u>Registered:</u> 78 <u>Contracted:</u> 10

No.	Method	Description	Projects
26	Savanna fire management	Projects reduce emissions from savanna fires in Northern Australia by undertaking strategic early dry season burns which aim to reduce the incidence and extent of larger, higher intensity fires in the late dry season.	<u>Registered:</u> 68 <u>Contracted:</u> 47
27	Avoided clearing of native regrowth	Projects avoid emissions by <u>not clearing existing native forests</u> in areas that have a history of land clearing. Projects also store carbon in the trees as they grow.	<u>Registered:</u> 2 <u>Contracted:</u> 2
28	Human-induced regeneration of a permanent even-aged native forest 1.1	Projects store carbon by <u>assisting regeneration native forest on land where forest cover has been suppressed for ten years</u> . Assisted regeneration can include cessation of tree clearing, controlling feral animals and/or weed species, and managing livestock grazing.	<u>Registered:</u> 151 <u>Contracted:</u> 98
29	Native forest from managed regrowth	Projects store carbon by <u>regenerating native forest on land that has been cleared for agricultural use</u> . Regeneration occurs by ceasing clearing and stopping any other activities that have been suppressing or destroying regeneration.	<u>Registered:</u> 32 <u>Contracted:</u> 17
Waste and Wastewater			
30	Alternative waste treatment	Projects avoid the emissions that would occur in a landfill. Alternative waste treatment is a way of processing mixed waste to remove organic material. The organic material is then processed through composting or other low emissions waste treatment options.	<u>Registered:</u> 19 <u>Contracted:</u> 13

No.	Method	Description	Projects
31	Landfill gas	Projects reduce emissions by capturing and combusting methane generated in a landfill. Methane may be combusted in a device such as a flare, boiler or electricity generator. Methane has a global warming potential 25 times higher than carbon dioxide; when methane is combusted it produces energy and carbon dioxide exhaust gas. Overall emissions are reduced because of the high global warming potential of methane.	<u>Registered:</u> 96 <u>Contracted:</u> 71
32	Source separated organic waste	Projects avoid emissions that would occur in a landfill by sorting organic waste at the source and placing it in a separate bin; such as a bin specifically for food waste. The separated organic waste is then processed through composting or other low emissions waste treatment options.	<u>Registered:</u> 4 <u>Contracted:</u> 1
33	Wastewater treatment	Projects reduce the amount of methane released into the atmosphere by changing the way domestic, commercial or industrial wastewater is treated. Potential activities include covering an open lagoon to capture (and then combust) gas, or building an engineered biodigester designed specifically to capture and combust methane from wastewater. This method could apply to meat, poultry and paper industries or treatment of domestic wastewater (sewerage).	<u>Registered:</u> 3 <u>Contracted:</u> 1