

IN-CONFIDENCE REPORT – 13 MARCH 2013 COUNCIL MEETING

Item No	21.3
Report Title	Island Energy Initiatives Update
Council Meeting Date	13 March 2013
Author	Andrew Boardman
Title	Chief Executive Officer
Attachments	Nil.
File Ref - Records	Nil.
Hours to compile	165.0 (to date estimate)
Strategic Plan Reference	1.1 – Work to achieve ongoing financial sustainability through additional funding sources 1.26 – Council will work to facilitate alternative power generation and distribution on Kangaroo Island and ensure that planning Policies encourage alternative energy use.
Purpose	Update on Island Energy initiatives currently in hand.
Executive Summary	To create baseline of knowledge within Council over activities associated with Island Energy initiatives and to seek Council ratification for exploratory activities to start to occur.
Recommendation 1	That this report is received for information
Recommendation 2	That Council ratifies the recommendation of the Chief Executive Officer to proceed with the purchase and commissioning of the Wind Monitoring Station in conjunction with funding from the RDA Adelaide Hills, Fleurieu and Kangaroo Island.
Recommendation 3	That Council ratifies the recommendation of the Chief Executive Officer to further research and then proceed with public marketing of a Bulk Energy Purchase Scheme to the Community as an activity of a cost / revenue centre called “ <i>Kangaroo Island Energy</i> ” in conjunction with staff from the RDA Adelaide Hills, Fleurieu and Kangaroo Island.
Recommendation 4	That Council ratifies the recommendation of the Chief Executive Officer to proceed with formal evaluation of economic and social benefits associated with Behind the Meter Solar Photovoltaic (PV) Solutions.
Recommendation 5	That Council approves: a. That all documentation relating to the above matter be kept confidential, pursuant to Section 91 (7) (b) of the said Act. b. Further, that pursuant to Section 91 (9) (a) of the said Act, that part “a” of this resolution shall cease from 30 June 2013.

Discussion

There are a number of items to comment on within this report:

1) Wind Monitoring Funding

In the June 2012 meeting we highlighted the possibility of getting access to the residual funds from the RDA Energy Project (\$30,000) and combining with some of our own funding to install some wind monitoring equipment. The RDA have confirmed with their funding provider (DMITRE / Clean Tech) that this is possible and we have a provision of \$26,000 in our Capital budget to match this and fund the purchase, installation and management of a Wind Monitoring Station.

Wind Monitoring Station Budget

Mast purchase and installation	\$	30,000
4x 1st class Anemometers	\$	8,000
Mobilisation to site	\$	5,000
Data Logger and Cabling	\$	5,000
WP management, instrument setup and installation time	\$	5,000
1x 1st class Wind Vane	\$	1,800
2x Max #40 Anemometers	\$	1,000
1x Back Up Wind Vane	\$	500
Total	\$	56,300

Whilst we have taken our foot “off the gas” on Big Wind over the last 6 months there is still likely to be a place for wind generation on the Island moving forward and therefore we should be looking to capture actual data as soon as we can.

One of the identified risks to the project are the assumptions derived from the Wind Prospect computerised wind modelling not being accurate at a local level. The computer-modelling is very sophisticated and can be directly compared to actual wind records maintained at Starfish Hill for example however there is a perceivable level of risk associated with any individual site and on-site monitoring for as long as possible prior to construction is accepted as standard practice within the industry.

Of the two proposed locations in the Dudley North area it is recommended that we place the mast on the location furthest South (i.e. away from the Coast) as this will be the most representative (pessimistic) location of the two to collect data from. This would be on the Howard’s land and they have indicated in the past that they would be very supportive of this project. We would enter into a short-term lease for access and installation only at minimal / no ongoing cost.

At this point in time the Council’s investment to get to this point has been minimal.

The equipment is ultimately portable so we would be able to relocate the mast and monitoring gear to another prospective location should we need to in the future (incurring only the costs of demount / remount).

To this end it is recommended that we proceed with the purchase and installation of the equipment at this location with the commitment of \$26,000 to the RDA’s \$30,000 to fund the full costs of installation.

2) Update on RDAF Application

Our Round 2 application was unsuccessful as Council are aware due to our notional *construction* start date in the project plan being outside of the project guidelines. This was a little galling as it could have been resolved as simply as changing the date and deeming *construction* to have started within the first 6 months through establishment of simple roadway and fencing to the site - however this was not an option. More thorough checking is required of this sort of detail going forward. As part of the debrief with RDAF, we discussed this and the project in general and we were strongly encouraged to reapply.

Round 4 opened in November 2012, seeking new Expressions of Interest (EOI) and we completed this in early December. We have been unofficially informed that the project was successful in the RDA Adelaide Hills, Fleurieu and KI Board review of projects and has been referred to Canberra for their assessment. The timetable on the RDAF website is as follows:

Notification of outcomes of the Expression of Interest process by the department	Wednesday, 13 February 2013
Full applications for Round Four open	Wednesday, 13 February 2013
Full applications for Round Four close	Thursday, 11 April 2013 5.00 pm local time
Minister announces projects to be funded from Round Four	From Friday 12 July 2013
Funding Agreements negotiated and executed	Within six months of announcement

It should be noted that the Round 4 funding guidelines have changed and there is no longer a “match” funding concept and also there are other criteria that have changed that allowed us to submit a far more generic application that is less focused on “Big Wind” and more focussed on “*Island Energy*”.

We are still waiting for information on wind / storage options and also the Phase 2 Biomass report and it is unlikely that we will have sufficient depth of information for either of these two projects to figure heavily in this RDAF application and therefore in discussion we have identified that there is probably a better financial case for writing the RDAF application with an aim of creating opportunities to fund demand management and generation infrastructure on a smaller scale initially with a view to reducing the “J”-Tariff load at midnight created by electric hot water systems kicking in as well as looking at various “behind the meter” solutions to mitigate loads during the day on Council, Government and possibly even private business premises with an aim of creating additional capacity within the network.

The CEO will be sourcing external assistance to support the writing of the RDAF application and we will continue the close dialogue with KIFA to ensure that all parties remain informed on progress of their various initiatives.

3) Bioenergy Resource Analysis & Technology Feasibility for Kangaroo Island

Phase 2 report is expected to be ready by Mid March for review. Once this review is complete the report will be available for Council information and consideration.

It is of note that the demise of Gunns has probably put some added impetus behind the land-owners associated with the Blue-gum properties to try and determine the route forward with possible markets for the trees – discussions have been held with Viento (owners of 700ha but interested in commercial opportunities for all of the resource), New Forest (the managers for the Canadian Assurance Company that own the majority of the old Great Southern land holdings) and of course RuralAus. RuralAus are also looking at biomass to power opportunity as what seems to be an acknowledged “last resort” for them to realise any value from the asset and / or Timber Mill facilities. They have informed us that this work will only proceed if they are successful in obtaining funding from ARENA. The recent fire at the Timber Mill has probably only exacerbated their need to develop the timber resources as an energy source rather than as a timber product.

The quantity of resource (24,000 ha) is such that bioenergy needs alone would be an insufficient market for this timber – the older it gets the harder and more expensive it becomes to harvest and manage and therefore the optimum time to get this resource to market is 2015 onwards. Viento seem to be putting a reasonable amount of effort into determining whether it is possible to find a sustainable market for the timber – they have unofficially discounted round log at this stage and are looking again at chip and / or pellets. If a fully commercial operation were to start on Island it would allow for some great vertical integration of this work with energy generation – power, liquid fuels, gas, waste heat use etc which would encourage a multitude of other opportunities to potentially develop – some Council may wish to look at through *Island Energy* and others that we may wish to market to outside investors.

4) Bulk Power Purchase

Having reviewed more cases where this sort of initiative is succeeding it is believed that we should start this process off on the Island with (potentially) both the Business and Residential Community. We have held discussions with the RDA and they have agreed that their Business Development Manager, Gerard Snowball, will be in a position to assist Council in carrying out this activity. In discussion with KIFA we learned that similar exercises have been conducted in the Riverland's with the commercial operators there but there were issues that precluded the initiative being rolled out. This has not appeared to be the case with Residential bills so it may be that with further research we find that we are only approaching the residential property owners rather than businesses as well. We will still need to explain to the Business Community why we are not looking to extend this initiative to them so we will follow up on this before commencing any form of public engagement.

The aim will be to collect 12 months of power usage bills from each interested party and then collate these into a demand document that allows for all of the different demands / pricing etc as well as offsets and offset deals that those people who have solar may have in place.

At this point in time it is envisaged that this collation work be undertaken by a contracted specialist business in this field. Should Council give the go ahead to start the active marketing of this concept in the Community we would then look to identify a suitable expert partner to work with. Currently these businesses work on a commission-basis and given that we may be able to drive a core of volume to them we may be able to both negotiate a discount on the commission and / or a benefit capture for Island Energy that will allow co-funding of other social benefit projects (e.g. subsidised replacement of hot water systems).

At this point in time it is almost impossible to rationalise how much benefit there may be in this exercise – other than we know what our annual Island demand profile is like – so that is the main prize – what we do not know is what sort of discounts for marketing the Island's demand in this way may be. The review of experiences both here in Australia and overseas (In UK) is that typically there are between 10 and 22% savings possible as an average. Those business that have been progressive / aggressive with their suppliers may see less than that and some residential customers may see more.

The table looks to evaluate what the process may be able to generate in terms of \$ savings to the Community:

Bulk Power Purchase Potential - an assessment of potential \$ benefit

	Island Daily Average Demand	MWh	6.5	6.5	6.5	6.5
	in	Kwh	6,500	6,500	6,500	6,500
	days		365	365	365	365
	hours		24	24	24	24
	Annual kWh	Kwh	56,940,000	56,940,000	56,940,000	56,940,000
1	Average Cost / kWh ex Retailer		\$ 0.09	\$ 0.13	\$ 0.18	\$ 0.20
	Total Value of Retail Power		\$ 5,124,600	\$ 7,402,200	\$ 10,249,200	\$ 11,388,000
2	% uptake by Island Community	30%	\$ 1,537,380	\$ 2,220,660	\$ 3,074,760	\$ 3,416,400
40%		\$ 2,049,840	\$ 2,960,880	\$ 4,099,680	\$ 4,555,200	
50%		\$ 2,562,300	\$ 3,701,100	\$ 5,124,600	\$ 5,694,000	
60%		\$ 3,074,760	\$ 4,441,320	\$ 6,149,520	\$ 6,832,800	
3	Potential Net Procurement Discount (PNPD)	8%	8%	8%	8%	8%
	Possible net savings on Power by Buying Group	30%	\$ 122,990	\$ 177,653	\$ 245,981	\$ 273,312
		40%	\$ 163,987	\$ 236,870	\$ 327,974	\$ 364,416
		50%	\$ 204,984	\$ 296,088	\$ 409,968	\$ 455,520
		60%	\$ 245,981	\$ 355,306	\$ 491,962	\$ 546,624
3	Potential Net Procurement Discount (PNPD)	12%	12%	12%	12%	12%
	Possible net savings on Power by Buying Group	30%	\$ 184,486	\$ 266,479	\$ 368,971	\$ 409,968
		40%	\$ 245,981	\$ 355,306	\$ 491,962	\$ 546,624
		50%	\$ 307,476	\$ 444,132	\$ 614,952	\$ 683,280
		60%	\$ 368,971	\$ 532,958	\$ 737,942	\$ 819,936
3	Potential Net Procurement Discount (PNPD)	14%	14%	14%	14%	14%
	Possible net savings on Power by Buying Group	30%	\$ 215,233	\$ 310,892	\$ 430,466	\$ 478,296
		40%	\$ 286,978	\$ 414,523	\$ 573,955	\$ 637,728
		50%	\$ 358,722	\$ 518,154	\$ 717,444	\$ 797,160
		60%	\$ 430,466	\$ 621,785	\$ 860,933	\$ 956,592
3	Potential Net Procurement Discount (PNPD)	18%	18%	18%	18%	18%
	Possible net savings on Power by Buying Group	30%	\$ 276,728	\$ 399,719	\$ 553,457	\$ 614,952
		40%	\$ 368,971	\$ 532,958	\$ 737,942	\$ 819,936
		50%	\$ 461,214	\$ 666,198	\$ 922,428	\$ 1,024,920
		60%	\$ 553,457	\$ 799,438	\$ 1,106,914	\$ 1,229,904
	Per kWh saving @ PNPD of 8%		\$ 0.007	\$ 0.010	\$ 0.014	\$ 0.016
	Per kWh saving @ PNPD of 12%		\$ 0.011	\$ 0.016	\$ 0.022	\$ 0.024
	Per kWh saving @ PNPD of 14%		\$ 0.013	\$ 0.018	\$ 0.025	\$ 0.028
	Per kWh saving @ PNPD of 18%		\$ 0.016	\$ 0.023	\$ 0.032	\$ 0.036

Notes

1	Typical cost for power ranges from 9c (large Commercial user) to 36c (typical Residential) - have erred on side of pessimism for average costs for Island
2	Have allowed for variable uptake for the scheme
3	Have tested for range of 8-18% average discount achievable

This range of savings – with little / no outlay from Council or the Community would seem to indicate that this is well worth pursuing.

Should the uptake / results be less than salutary then Council will have done nothing else other than facilitate a cost-saving exercise for themselves and the Community and need not take the exercise any further than this. If on the other hand the results are very positive then we should be in a position to bolt this alongside of other *Island Energy* initiatives with an element of commission-based funding from the discounts negotiated to assist with future Community-benefit projects (as mentioned previously).

We therefore seek Council's concurrence to proceed with this initiative.

5) Public Building Retail / Behind the Meter Solar Photovoltaic (PV) Solutions

We have been talking with a number of local businesses here in Kingscote to evaluate the potential for this option.

Basically the operating model would be as follows:

- 1) Identify premises / businesses that have a reasonable and consistent commercial demand and that have a suitable north-facing roof area.
- 2) Model is to lease roof space and install solar panels (subject to qualified engineering assessment as would be expected) suited to provide up to 80% of the demand of the building (actual figure TBC). The installation would also involve separate meters being installed on the Business side of the existing Distribution panel recording output that is produced and utilised "in-house" along with any power actually fed back into the grid at times of low demand.
- 3) Build a suitable discounted energy supply tariff structure for the business passing an element of immediate saving back as an incentive to participate plus the potential of a

fixed rate over a period of time to further insulate the business from inevitable annual power bill increases.

- 4) Participant remains grid connected and has potential to operate on grid for 100% of their load if solar system goes down. Participant also receives power bill from Island Energy for the solar generated power consumed. This may be consolidated into one bill through the bulk purchasing scheme if this is possible.
- 5) Infrastructure is written off over 20 years and remains Council property on a “no replace” basis given that technology may change over the life of the project.

There are two - three businesses with whom we can work to see whether this is a viable business model for Island Energy and to establish the lease / management model required to make this viable and sustainable.

We therefore seek Council’s concurrence to proceed with the evaluation of this initiative and to report back with a finalised model and proposal for the business venture.

Governance Considerations

(relates to consistent management, cohesive policies, guidance, processes and decision-rights for a given area of responsibility)

Nil at this time.

Risk Management Considerations

(identification, assessment, and prioritization of risks (defined as the effect of uncertainty on objectives, whether positive or negative) followed by coordinated and economical application of resources to minimize, monitor, and control the probability and/or impact of unfortunate events or to maximize the realization of opportunities)

Nil at this time.

Economic Considerations

(Assessment of likely financial implications of pursuing a course of action)

Addressed in the report.

Social Considerations

(Assessment of likely impacts with the Community)

Nil at this time.

Environmental Considerations

(Assessment of likely impacts on the environment)

Nil at this time.