LEGISLATIVE ASSEMBLY OF THE NORTHERN TERRITORY

12th Assembly

Committee on the Northern Territory's Energy Future

Public Hearing Transcript

11.30 am – 12.00 pm, Friday, 28 November 2014

Litchfield Room, Level 3, Parliament House

Members:	Mr Gary Higgins, MLA, Chair, Member for Daly Mr Gerry Wood, MLA, Deputy Chair, Member for Nelson Mr Nathan Barrett, MLA, Member for Blain Mr Gerry McCarthy, MLA, Member for Barkly
Apologies:	Mr Francis Kurrupuwu, MLA, Member for Arafura
Witnesses:	**Environment Centre NT** Ms Anna Boustead: Policy and Campaigns Director Mr Michael Brand: Smart Cooling in the Tropics Project Officer

Mr CHAIR: We will get under way. On behalf of the committee, I welcome everyone to the public hearing into electricity pricing options. I welcome to the table to give evidence to the committee from the Environment Centre NT Ms Anna Boustead, Policy and Campaigns Director, and Mr Michael Brand, Smart Cooling in the Tropics Project Officer. That is a good title. Thank you for coming before the committee. We appreciate you taking the time to speak to us today and look forward to hearing from you.

This is a formal proceeding of the committee and the protection of parliamentary privilege and the obligation not to mislead the committee apply. This is a public hearing and is being webcast through the Assembly's website. A transcript will be made for use of the committee and may be put on the committee's website. If at any time during the hearing you are concerned that what you will say should not be made public, you may ask the committee to go into a closed session and take your evidence in private. I will ask each witness to state their name for the record and the capacity in which they appear. I will then ask you to make a brief opening statement before proceeding to the committee's questions.

Could you please both state your name and the capacity in which you appear.

Ms BOUSTEAD: Anna Boustead, Policy and Campaigns Director, Environment Centre NT.

Mr BRAND: Michael Brand, COOLmob Project Officer working on the low-income energy efficiency program.

Mr CHAIR: Would either of you like to make an opening statement?

Ms BOUSTEAD: Yes, we would, Mr Chair, if that is okay. In case you are unaware, the Environment Centre NT is the peak community sector environment organisation in the Territory. The Environment Centre is encouraging innovation in sustainable living through its community solar and COOLmob programs. Since 2002, COOLmob has been delivering household and sustainability education and outreach across the Darwin region and beyond. COOLmob also operates in Alice Springs through the Arid Lands Environment Centre.

We are encouraged by COTA's comments earlier today. The Environment Centre supports the ongoing role of the committee in seeking to address the future energy needs of the Territory, and would like to see it drive a rapid shift away from polluting fossil fuel sources towards sustainable clean energy sources. The Territory is well-placed to deliver world-class electricity grids, technology and pricing structures. It has abundant solar resources, being a world solar hot spot, as well as opportunities to leverage large-scale solar thermal, geothermal, tidal, wind, wave and biogas electricity generation. We are encouraged by the Northern Territory government's recently announced diesel to solar program for remote communities and would like to see it build on its modest goal of 15% diesel savings.

The Territory has the perfect opportunity to rapidly move from its current status of lagging behind international efforts to address climate change to becoming a global leader in renewable energy generation and inspire the rest of Australia through commitment through both large- and small-scale renewable energy targets. A plan to integrate these technologies has to be strategic and has to start now with a clear path to achieving short-, medium- and long-term outcomes. Research and informed energy policies, implementing targets tied to an integrated climate policy, a price on greenhouse gas emissions along with electricity pricing tariffs and feed-in tariffs for solar are key to achieving these goals in the future.

It is critical that we support communities and individuals to achieve energy independence through decentralised renewable energy systems, which will in turn lower infrastructure costs. There is an opportunity to move away from fossil fuels towards renewable energies when the Channel Island power plant reaches the end of its life in around 2025, and with the construction of new suburbs which could embrace sustainable design through energy-efficiency and supporting decentralised cooling and solar energy systems.

I would like to introduce Michael Brand, who has some expertise in energy efficiency and renewable energy through his work with the Environment Centre's COOLmob Smart Cooling in the Tropics program.

Mr BRAND: I do not want to speak specifically in introduction to the technical aspects of electricity tariff design, but I would advocate for the introduction of smart meters. This is a really critical part of an equitable tariffing system and also for the integration of renewables into the grid. Smart meters are a critical part of the infrastructure that needs to be developed.

In regard to factors to be taken into consideration for design and implementation of electricity tariffs, I think public education and community engagement will be critical. If we want to change people's behaviour, it is really important we engage the community if this is the goal of changing tariff designs. With regard to a feed-in tariff for renewable energy, solar PV is perfectly placed to take the peak out of the demand of the energy system. Where

we get our biggest peak in energy demand, we get our highest solar output, so there are some gains to be made there.

ECNT would be able advocate for a fixed-term stable floor price for rooftop solar PV to provide some stability for investment for both business and households.

We also advocate for more to be done - as was discussed by the last members from COTA - on the side of energy efficiency so that demand can be better managed. There are some big gains to be made there. Energy efficiency can really provide some big savings at very low costs to the grid, especially at those peak times. There are a lot of opportunities, especially when they are coupled with the smart meter technology.

There is a risk that people will start to seek self-storage options. By that I mean batteries. You run the risk there of having people drop off the grid and having fewer participants in the grid to service and run the grid.

We have submitted the Bloomberg New Energy Finance Report. There is quite a bit of information there about the fact that, over the long-term, renewable energy will drive down the cost of electricity. I urge you to have a look at those figures. There are big opportunities, for example, in an out-of-sunlight hours, large-scale renewable plant - somewhere south of Katherine would be quite viable.

The biggest thing is to push the fact that we need to invest in research development and planning of our energy system, especially with regards to renewables. These technologies are changing all the time. There is rapid growth in all of these technologies; the growth is outstripping demand. In 2010, renewables investment topped fossil fuel investment and it is continuing to grow. The technology is changing so quickly that it is really important to put research and development into understanding those changes and where we can leverage on those for making electricity more affordable in the Territory.

Mr CHAIR: Okay. Low-income earners were raised earlier. Can you briefly summarise the objectives of the LIEEP.

Mr BRAND: The LIEEP program is the Low-Income Energy Efficiency Program. There are two grants operating in the Northern Territory. One of them was given to COOLmob, so we are working with urban groups, COTA as was mentioned, Yilli Rreung Housing, which includes the Bagot community and was mentioned earlier and Melaleuca refugees. Those are some of the groups we are working with. The LIEEP program has also acquired some funding, or Power and Water has acquired some funding to run them the Manymak energy efficiency program in Arnhem Land, so they are working with Indigenous groups outside the Darwin area.

Mr CHAIR: What sort of work are they doing? What is it?

Mr BRAND: It is energy efficiency, and literacy more importantly. The programs all run slightly differently, but ours is focused on doing home energy audits to assess where people are up to with their energy use and how they use their energy in their homes. We will provide them with a range of different tools and infrastructure to mitigate the cost of electricity. The most important thing is the community engagement and energy literacy that comes out of the program, getting people to understand how their energy works and how they can reduce it.

There have been really big gains. We have seen some really interesting things. The Power and Water Manymak program is seeing some really interesting counter intuitive things in the positive and the negative aspect. There are some things that surprise us when we see that people have really strong understandings about energy efficiency. We are also surprised in the other direction, by some of the households and their energy use and lack of energy literacy. That is what we are working on.

Mr CHAIR: When you do some of these audits on these people's houses and you make suggestions, how often do you go back afterwards to follow-up on it to see if they are still doing it?

Mr BRAND: Yes. We have a three-, six- and 12-month feedback cycle. We are touching base with them on that basis and also collecting data for some of our programs. We will install real time meters so we will collect real time energy information and temperature loggers as well. There is a strong research component inside the program. We are working with CDU to gather information and understand aspects of energy efficiency and also thermal comfort, which is a big part of the equation; how comfortable people are in their home at different temperatures. That is key to energy efficiency. Our project is focused on cooling because that is the biggest power consumer for residents in the NT.

Mr CHAIR: I can remember early in our inquiry talking to Power and Water. They said education around demand and usage of electricity had levelled off. Would you agree with that? Has something happened? There is not

enough paraphernalia to highlight to people. Secondly, in doing the audits, does anything come out of that which should be made more generally available? Is there a pattern to what people are doing?

Mr BRAND: There are still huge savings to be made by energy efficiency and also behaviour change, which is probably more important – changing the way we use energy. I imagine part of what you are looking at with the tariff design is to try to take the peak out of that load in the middle of the day. It is quite easy to get people to change behaviours through the pricing structure to have them use energy at different time for appliances that do not need specific time of use energy requirements.

Ms BOUSTEAD: Future funding for the COOLmob program is critical because at the moment the work COOLmob is focusing on LIEEP but that is only one facet of a whole energy efficiency program and it is delivering enormous benefits to the Territory in research and data collection as well as through energy reduction in general. There are also important health benefits as well and, with the impacts of climate change, we are looking at over 300 days of the year being over 35 degrees by 2070. That is a significant health risk to Territorians which needs to be factored in to any future planning. It particularly highlights the multiple benefits of a program like COOLmob.

Mr BRAND: We had free programs or subsidised audits through Power and Water. I do not think there are clear patterns coming out of the project. We have only had about 100 audits and are going for 480. It is quite early in data collection, but it is becoming clear that energy use is unique as each household; different people use different energy in different ways. Having the capacity to audit and help them understand their energy use is a useful way to try to combat the high costs.

Many households are incurring big costs. Many people live in some households hence their electricity use is quite high. You see people turning off their air conditioners because they cannot afford to run them or are using them sparingly. That is coming out as well. People on low incomes are very energy efficient, and where we can make gains is more in the middle class – the people who are drawing a lot of power.

Mr McCARTHY: With your work in Arnhem, you must be getting some interesting information around house design. Are you translating that to government in recommendations about new houses in regional and remote communities?

Mr BRAND: Passive cooling would be an important part of that. COOLmob is not running that program; it is running through Power and Water, through the Manymak program, but it is the same body of funding. It is federal funding for the Low-Income Energy Efficiency Program. It would be worth following that up with Power and Water guys on the Manymak program.

Ms MANISON: We are looking at electricity pricing options and clearly wanting to reduce peak demand and what people have to pay for power and water. Parameters can be set around different peak and off-peak pricing options going forward. Do you see a better result if you drive heavy education in the community as well? Do you think that drives a better result at the end of the day? It is fine to set prices, but if people do not fully understand how to further drive those prices down for themselves - with your experience with delivering a program like COOLmob, how much of a difference does it make to people?

Mr BRAND: It is critical. It is a little skewed because we are working with low-income people. They are often people who have a little more time to devote to minimising their energy use. The people we are dealing with are very energy conscious and they would definitely adjust their behaviour to use less electricity if you put a tariff in at the peak time.

You would have to do a fair bit more research – they do it in southern states so I imagine it works. It would be much more effective if you have really good community education and public engagement. Yes, it will have an impact, definitely. It is hard to say based on the numbers because we are working with quite a different cohort. There is a danger that people will ignore it.

The fuel price people generally ignore, as in petrol prices. People will mostly go about business as usual and just incur the cost. It is critical, if you are going to change the tariffing design, to have a really strong community engagement aspect to that and a push for behavior change. That is, ultimately, the aim of the tariff design.

Ms BOUSTEAD: It is critical you do not create confusion in the community about why - if there are changes - they are occurring, and ensure people understand what the drivers for those changes are. People will sometimes make all sorts of assumptions about what those drivers are. Unless it is clear this is why these changes are happening, then people may reject it. Yes, absolutely it is important for people to be fully cognisant of why there needs to be changes. Also, looking at in the context of climate change is really important.

Mr WOOD: Can I ask …

Mr McCARTHY: That came up in the end cost, that it is linked to appliances as well. You cannot really engage with these new strategies unless you have the technology in your washing machine to switch it on at 3 am. Yes?

Mr BRAND: Yes.

Mr McCARTHY: So, that has to be a big factor in the whole move as well, which NTCOSS has in its submission and offers government suggestions around.

Mr BRAND: In our submission, you will also find references to some new Australian standards. There are chips in all new air conditioners that will help them govern – they have time of use and load shifting governors in them. Probably a part of a smart meter roll-out would be considering implementing some of the technology that is needed to have those smart appliances that will help mitigate the real peak loads as well.

Ms BOUSTEAD: It will probably be worth the committee considering technology shifts too, historically. There is a pattern of early adopters that drive interest and there is usually, classically, a massive jump. For example, with mobile phones or DVDs or whatever it is, whenever there is a technology change there is a pattern that occurs. That would be the same for solar as it would be for any other type of new technology.

Mr BRAND: There is a danger that people will leapfrog the grid, and battery technology will become cheap enough that they will store their own energy. Then you will be trying to service the grid for a much smaller percentage of the population. If we do not leverage the renewable technology, people will do it themselves and the grid could be left as a stranded asset. I do not know if you are familiar with that term, but that is the potential danger.

Mr WOOD: Do not forget fuel cells.

Mr BRAND: I know that is a favourite of yours.

Mr WOOD: You made a statement about climate change and talked about how over a number of days the temperature may go up in the future. On the other hand, you also say we want to have more renewable energy sources and talked about batteries. Whilst that is nice, the reality is we need to know what the whole-of-life processes are. None of the solar panels and the batteries are carbon emission free. Have you done studies to compare the carbon emissions from a gas-powered power station to what is - even though it is renewable - has a cost to it: aluminium, solar panels, lithium and they are not everlasting; you have to buy new ones over a certain period of time. Has anyone done a whole-of-life comparison to see if renewables could be producing more carbon emissions than a gas-fired power station over, say, a 100-year period, because otherwise it might look good but is it producing a change?

Mr BRAND: It is probably an issue of scaling. You get large efficiencies with the gas-fired power plant. I have not specifically read up on this topic but am happy to take it on notice and gather some literature on the long-term carbon emissions total for renewables, and I am pretty confident renewables will come out heavily on top. I am happy to take it on notice and get some literature on that.

Mr WOOD: You can have the 'feel good' feeling, and I am happy for that, but we gave to be real when we are telling people this is an advantage to our client that it is an advantage to the climate.

Ms BOUSTEAD: I think everything has an amount of embodied energy, and I hear what you are saying in the cases of solar panels - it takes a lot of energy to heat the silicon to make the solar panels …

Mr WOOD: The aluminium frame?

Ms BOUSTEAD: Yes, but the solar as a full life cycle is a huge benefit in greenhouse gas emissions, despite the initial energy it costs to make solar panels. With batteries I am not sure, I would need to look into that but I suspect it would be the same.

Mr BRAND: If you are looking at larger scale renewable projects then you get the same order of magnitude savings and benefits as you do for large-scale gas.

Mr WOOD: You can see why I like tidal; you do not have to worry about that.

Mr BRAND: Definitely.

Mr WOOD: It goes and goes.

Ms BOUSTEAD: The other cost is the infrastructure cost, and there are two schools of thought around that. You can move to a decentralised energy independent model, which is an obvious way to go for remote communities for example, but for a bigger city like Darwin you could choose to maintain a centralised system that was fuelled by large-scale solar and a range of other energy options.

However, the maintenance of that grid has a cost, and that also has an energy cost as well. The maintenance of all that infrastructure has an energy cost as well as an economic cost. It is not just the piping of the gas; it is the whole system of fossil fuels, particularly the way the Territory government is leaning at the moment towards shale gas, which has a huge climate cost and the amount of fugitive emissions generated from the shale gas industry are enormous. That needs to be factored into any future plan for energy as well.

Mr WOOD: Thank you.

Mr McCARTHY: It is an interesting period in development and economics of scale. In the bush if you present a $400 000 renewal energy project to an energy user they will say, 'I'll just buy the diesel, mate'. They are not thinking longer term, they are not thinking about climate issues, it is purely an economic outcome to run the business …

Mr BRAND: On a very short time scale

Mr McCARTHY: Yes, and this is where it comes into the education and awareness process which is gathering a lot of momentum now.

Ms BOUSTEAD: I guess that is where policy instruments come into play. Of course, a company coming into a community for a few years to build something or to set up a mine will only be looking at the life of its business - five or 10 years. It will not be looking beyond then because it does not have an economic interest beyond then. Communities and the government have an interest in the long-term future of the Territory, and that is why we need to set up policy instruments now that are looking forward instead of relying on industry to take the lead when that will lead to short-term outcomes

Mr CHAIR: We are getting close to time. Is there anything that you want to highlight with us that we have not covered today or in your submission?

Ms BOUSTEAD: I do not know. I do not have anything further to add. Michael, do you?

Mr BRAND: Just the fact that there is all of this abundant free energy out there. The economics of it is starting to talk now. The price of diesel and fossil fuels is going up and will only go up, and renewables is coming down rapidly. There is the danger that we will be left behind if we do not start planning for it now.

Research, development and planning is probably the most critical part of this whole arrangement. CDU has a very small capacity at the moment to do this research, and there is not a lot of research happening. Being in the tropics and being a first-world country, we are one of the few countries that have the economy to look at this seriously. We have the technology. We also have the research institutes and the capacity to look at this. We could be leading the tropical world in renewable energy, potentially.

Mr CHAIR: Thank you for your time today. I am sure we will talk again. We have spoken in the past and will talk again in the future. Thank you very much.

Ms BOUSTEAD: Thank you.

Mr BRAND: Thank you.