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ECONOMIC, EDUCATION, JOBS AND SKILLS COMMITTEE

Inquiry into community energy projects

Waurn Ponds — 5 December 2016

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Witnesses

Professor Peter Hodgson, Deputy Vice-Chancellor (Research),

Mr Ian Kett, Director, Strategic Programs, and

Professor Samantha Hepburn, Director, Centre for Energy and Natural Resources, Faculty of Business and Law, Deakin University.

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The CHAIR — Good afternoon and let me start by first of all thank you, Ian, for the tour. It was excellent and interesting and at the same time allow me to introduce which you already met with the others, on my left is Mr Don Nardella, Mr Peter Crisp. We've got Kerry as the Executive Officer and Dr Marianna and I need to read this for your information. Welcome to the public hearing for the Economic, Education, Jobs and Skills Committee Inquiry into community energy projects.

All evidence taken at this hearing is protected by parliamentary privilege. Any comments you make outside the hearing are not afforded such privilege. Hansard is recording today's proceedings. We will provide a proof version of the Hansard transcript so you can correct any typographical errors and I would like to invite you to make a statement. Before you start, if you could please say your name for the Hansard. Thank you. Thank you very much.

Professor HODGSON — Thank you. Professor Peter Hodgson, Deputy Vice Chancellor for Research.

Mr KETT — Ian Kett, Director of Strategic Programs.

Professor HEPBURN — Samantha Hepburn, Director of the Centre for Energy and Natural Resources Law.

The CHAIR — Thank you.

Professor HODGSON — Well first of all welcome to Deakin. It'd probably be your first time here I'd imagine.

The CHAIR — Thank you.

Professor HODGSON — I'll also thank Ian for all the work he's done behind the scenes to get this together to support you. I think that in developing our strategic research plan for the next, we call it the guiding plan for research 2020, and that's our sort of horizon that we're looking at the moment and the energy area is an area of very strong interest within Deakin University. I have to say also from the Vice Chancellor's level and the university as a whole we're very aware of also trying to lower our energy footprint particularly down here at Waurn Ponds where we have the carbon fibre plant and a number of other very energy intensive activities.

So I know Ian will introduce in a minute so we've got a lot interest in renewables and microgrid to actually then manage how the renewables feed the power needs of the university. And then with the Epworth Hospital to come through which is the only way in here as well, they're a big user of energy as well and they're very interested also in how renewables and a microgrid could be used to integrate with their energy needs going forward so it's definitely an area of great interest to us.

Mr KETT — We have a short presentation that we'd like to take you through if we can.

The CHAIR — Yes.

Mr KETT — I think we've only got about 10 minutes for that so we'll try and be brief but just to reinforce some of things that we said in our submission and take them a bit further. So as Peter said we are developing a really strong core around energy and research at Deakin University on renewable energy under Deakin Energy. We've been bringing together—so we've been bringing together our capabilities right across the university through the different faculties and schools and institutes that have capabilities in this space to allow us to get a strong focus on energy but also to build the teams that we need to contribute to providing some of the or investigating some of the solutions as we move forward.

We've identified a number of priorities here in microgrid development which we'll talk a little bit more about I'm sure today. The integration of power systems, we covered a little bit of that in the CADET Laboratories, natural technologies with battery hub. The new materials, new designs, energy efficient practices with technology are all a part of this as well and policy and regulation absolutely critical to how we might move forward and we need first of all we accelerate development in this space to keep up pace with technological development.

Deakin Energy, we're working across the spectrum here with technology providers, with users, both

fixed energy user and mobile users. I mentioned Smith Electric Australia on the tour who is collocating here with Deakin and electrification of vehicles. Forming partnerships with others where we can make a difference with that and certainly with energy providers and I touched on the partnership that we have with AusNet Services which we hope will grow into the future as well.

Of real interest in the significance I think too is that we have now formed an energy community with some external partners here. You can see AusNet Services, Department of Environment, Land, Water and Planning through Fisherman's Bend and also the Renewal Energy Group are very keen to be involved in this. Australia Post is a major user of energy and in their property development. Cbus Property as well.

Telstra are coming into this. Norman Disney Young is an engineering firm and as Peter mentioned Epworth Hospital in Geelong here are very keen to work with us. So on the basis of a community here with some key players that we think can work together to help us shape the research directions and priorities for the future to work collaboratively on pilot and demonstration projects and importantly here to provide leadership with influence in terms of how we might move forward.

We're all trying to find the solutions and find a way forward here so we think bringing people together is really critical to help up to try and do that in a collaborative manner. Just in context and I'm not going to labour this because a very well informed audience but we understand the environmental issues that we have, we're facing, and also in the context of growing demand for energy on a worldwide basis.

There's no doubt that we need to be moving more rapidly in terms of our work with a sustainable generation and supply which we are certainly doing in Victoria and also working on energy efficiency practices and in processes as well. What is really interesting in this space is that and we talked a little bit in the tour about the advancements in technology now that are making technology much more accessible, reducing costs, making it available, really causing major disruption in the market right across the energy supply chain.

So we're seeing companies right across that chain now starting to really delve in things that they would never have even considered so playing with microgrid systems, playing with a whole range of things and in fact, if you like, almost cannibalising their own businesses because they can see that the market is changing. So they're really looking at how they can stay in the market, stay in business and move into the future.

Lots of challenges for us to face here and lots of opportunity so we need to be really thinking about our design for renewable energy systems both local systems in microgrid but also centralised systems not just wind farms, solar farms, other energy technologies as well. We need to look at the systems that bind these programs together. To think about how we manage those, how we articulate with the grid and so on.

Grid integration and stability are absolutely critical to this. I think certainly for the foreseeable future it will be grid integrated systems that we'll be looking at. There will be cases of independent island microgrid systems but even they will need to working with our grid system as well to be able to look at issues of security around cyber security obviously critical and reliability but also looking at trading models and transactions.

How do we manage that in this changing market place and policy regulation which I mentioned before. From a community perspective we've seen a huge uptake in the solar panels and battery systems coming into households and that certainly is going to continue into the future as the technology improves and there'll be greater interaction between households in this area. Beyond that I think that we're already seeing the signs of increased interest in involvement microgrid development so we can formalise systems coming into the community level to provide power for those communities and potentially be feeding power back into the broader systems.

Good things about this, you know, that's increasing community consumer control over energy and that's certainly something that the power providers are very concerned about at the moment. There's a change in the balance here in terms of control. It also gives us greater diversification of supply and potentially a greater amount of energy so that's important. But the bottom line there, the understanding of microgrids and grid integration is absolutely critical for us as we move forward.

So we believe that there's a need for a major demonstration research facility that we can really start to utilise to play with all the variables in terms of microgrid systems, to look right across not just the technologies that we use but how we integrate those technologies, the IT platforms, integration with the grid and the operational models here. And this was really important for us to inform how we move forward in communities across the country.

We have a relationship with the Surf Coast Shire and we're looking at a microgrid system there in the local community. That's one level of development but we also think that the Deakin Waurn Ponds campus, this campus provides a tremendous opportunity for us to look at that. We, as I mentioned earlier, we sit on around 330 hectares of land so we've got space. You can see up in the top corner there is the Epworth Hospital and then we have capacity at the back of the campus to be thinking about a solar wind farm.

You can see the residential area is now encroaching on the campus or starting to surround the campus so indicating the level of growth in Geelong. So this one is showing the potential location which I pointed out the distance to you when we got up to the top of the stairs for a dedicated wind solar farm. The cadet building noted there that we went through with the electric labs potentially we would look at some solar even wind building them out of a wind turbine system on that for our research purpose and then linking possibly with a trial system and a training laboratory that would sit closely perhaps to at least feed a substation so giving some capability to that.

Interesting, as Peter mentioned, that Epworth Hospital is very keen to partner with us to look at how they use renewables. They have a very sophisticated energy system already but they're very keen to look at adding to that with renewable and particularly in their critical energy functions which surprised me a little bit too. So that's just a very quick whirlwind in terms of Deakin Energy and where we're going with our microgrid system.

We want to keep moving with the microgrid because we think there is a real need for that and the partners that we're developing through our community and beyond are very keen to be involved in it as well. Samantha has joined us today to talk a little bit about the policy work and community modelling. Sam has some really good expertise in that space so perhaps if I hand over to you Sam.

Professor HEPBURN — Thank you very much. First of all thank you very much.

The CHAIR — Thank you.

Professor HEPBURN — Lovely to meet you all and thank you, Ian, for this opportunity. Of course you know as we've just said we need to facilitate the progression of renewable energy. It's a huge issue. It connects to climate imperatives. We've got a massive acceleration of onshore resource development and so with that comes inevitable regulatory and policy issues. One of the biggest concerns of course is ownership.

In a public resource framework that Australia has fossil fuels are regulated by public interest obligations that the state has whereas renewables are largely onshore and so there's going to be concerns about how those renewable projects will be operated and this, I think, connects with the project that we're looking at which is community involvement. And we can see and I've only got five minutes so I think I'll just whip you through some of the interesting examples that I've been looking at.

Obviously there are leading examples in Europe. They're all grounded in cooperative norm principles where essentially what you're looking at is getting communities more—there's perceptual concerns with communities about renewable energies projects being controlled outside the framework of their involvement and that's of course generated a significant degree of conflict particularly with conventional and unconventional gas projects.

So to try and really facilitate this we need to ground them in cooperative norm principles. Most ownership models are informed by the fairly famous Rochdale principles which are based on open membership, democratic control in one member one vote, distribution of surpluses proportionate to investment, limited interest on capital. So the idea essentially then is that communities are engaged in the projects that are happening on land that they may own or that they may live in the vicinity of and

that means that they're more inclined to traverse them.

The Denmark Model is particularly oriented around the regulatory framework in Denmark where regulation mandates that electricity consumers, for example, must own the wind turbines. So over there the primary model is a wind partnership which involves private contractors. They invest. Power is generated and sold wholesale to the local utility. The wind partnership can claim a rebate obviously from whatever carbon mechanism exists.

Now the important thing here is this generates localised community business. It promotes regional involvement and it supports broadly communitarian values which are extremely important. We're seeing this across the board. I'm involved in a project with the Environmental Policy Unit where they're looking at how to connect and advance community engagement principles so I think this is all extremely important as onshore resource projects accelerate.

Now what are the challenges for community ownership models, I've probably only got one minute left, sorry. Obviously the perceptual problems and that stems from a fundamental problem with lack of community knowledge about the financial advantages, the social advantages, the environmental impacts. All of these sort of collective concerns. The absence of strong community engagement protocols within the regulatory framework is a significant regulatory failure that needs to be addressed.

Obviously there's absence of tax advantages to facilitate collaboration. A lack of regulations standardising, and this is crucial, financial and technical provisions for private grid and interconnection agreements. This would be extremely useful in terms of accelerating community renewable models. There's uncertainty—and the absence of the standardised framework generates uncertainty which is a potential disincentive for community investors and uncertainty of course as we've seen particularly in the unconventional gas space generates conflict and confusion and that can often stem from uncertainty about how it's going to impact with fundamental ownership entitlements.

So what does regulation need to do, I've just tried to come up with, you know, a few points which really just expands upon our submission. Regulation needs to clarify who bears the cost for connection to the grid and who bears the costs of any upgrade, very important to clarify those principles. Regulation needs to promote recovery of cost and rate charges. It needs to progress and facilitate a localised manufacturing base for community ownership.

Obviously market mechanisms that would promote local production of things like wind turbines and, you know, policy frameworks broadly need to reframe renewable energy as community oriented to prevent that sort of initial disengagement from occurring. And finally, overarching directions which is really just drawing on the themes of what we've outlined in a bit more detail in our submission.

Community ownership will reduce onshore resource comfort. Promote communitarian values. This is particularly critical. It's appropriate of course, we have a public resource framework. We do not have a private resource framework so even though we're looking at onshore resource development, that's still an appropriate move forward in the regulatory space. It supports a transition to renewable energy. It's intuitive and it's certainly something that is apparent across the globe.

Regulation must introduce improved fiscal incentives and it must introduce transactional controls. So those two elements will help facilitate investment and reduce uncertainty. Okay. I think that's probably all I have time for.

The CHAIR — Thank you.

Professor HEPBURN — Thank you very much.

The CHAIR — Thank you very much. All right. We're meant to have some questions and I might start with the Surf Coast Shire microgrid. What was the motivation for Surf Coast Shire to develop a microgrid and what stage of development is the microgrid and when it's likely to start operating? And the last one is what barriers have you come across when developing the microgrid?

Mr KETT — So it's still in the early stages of development, Nazih, but Surf Coast Shire approached us around being involved in looking at renewable energy for them and the microgrid proposal has been developing from there. So they have established a task force to look at this formally, Renewable energy,

that Deakin has representation on. We've done some modelling around the feasibility of a microgrid or a mini system for them and this is a smaller system that would be designed to power their sports fields and their council offices as a demonstration project for the community.

We're now looking into the detailed costings around that for capital works and potential partners that might become involved in that system. So they are keen to move relatively quickly but we're still to get to form the design brief stage on that. In terms of the barriers it's interesting and we're seeing the really strong correlation with what we're proposing here at Waurn Ponds is to be able to really as to how you would apply some of things on a more larger scale system into a local community when you think about wind generation and again we've done the weather analysis down there.

It's a very windy place as well down here on the Surf Coast and suitable for solar also. So how to build wind turbines into a community when you're sitting right within a residential area. So we'll need to look at some of the developments in technology, the new designs that are more aesthetically pleasing, so the lower level wind turbines that might blend in their lighting towers that they have already there.

So there'll be a lot of things that we need to work through with the Surf Coast in that regard but we see that as an important demonstrator of how you could do this in a local community where you've got residents right around and they're a part of that fabric so that community ownership model, Sam, you were talking about, would be really important there, the community engagement process that we go through with them.

The CHAIR — Thank you for that. The community microgrid relies on battery storage. Now how reliable is current battery technology for supporting the network during peak demand or outages?

Mr KETT — So the battery technology is developing and I'm not an expert in this field but from my understanding, you know, we have progressed to the point where we're seeing test of the batteries being installed in local households now and batteries being used to support some of the microgrid systems that are being developed but they have limitations currently. So that's one of the areas of developing science is to look at there are properties with our battery technology to give us more reliable or capacity to support renewable generation because we know we can generate the power through various sources.

Being able to store that through the times where you're not generating through wind and solar is absolutely critical and then being able to you know to be able to utilise that power as we want. So the technology is there but it needs to progress further.

Professor HODGSON — I think that the point there is really that each application for a battery is quite different so, you know, mobile phone, you want very quick charging and life, a certain amount of life. This large energy storage is quite a different profile and so I think at the moment there are technologies which will meet the current needs but as Ian said I think that to get to the future where we really want to have much more efficient energy storage at a relatively local capital cost because the problem is the capital cost is quite high at the moment.

So we want to reduce the capital costs so that we get to a solution which is ideal for this particular application. So, as I say, basically batteries are—you think of a battery being a battery but it's not. You know there are many different types of batteries for different applications and the research we're doing at Deakin and our square of Australia is trying to again look at the typical applications and tuning the technology for that application.

The CHAIR — Thank you, Peter.

Mr CRISP — Professor Hepburn?

Professor HEPBURN — Yes.

Mr CRISP — Thank you for all going through these. I want to talk about a number of things. Firstly, as the energy market moves towards its distributed energy sources less energy comes out of the grid, how should the network and expansion and maintenance be funded for? You mentioned in your presentation that it's an issue. What are your suggestions?

Professor HEPBURN — My suggestions for funding as we move from the grid to sort of more

community oriented projects, okay, well, you know, if you look at some of the elements of the submission you can see that private investors so private contractors, it could be community oriented and what we've got to do is facilitate and encourage that uptake on the basis that it's a localised project. There are community benefits. You reside in the area.

You are going to—I mean, essentially the elements of it which are set out in the submission, would be that you would actually as an investor you're going to accrue significant benefits from facilitating a renewable project which is effectively a business that you will own and run but you will also live and reside in the area. So it's not a co-op. It's more akin to the partnership framework that exists in Denmark. So funding it would be essentially based upon private investment.

Mr CRISP — And with consumer or people who are doing this, will we get a model out of those who are doing it for perhaps ideological reasons being climate change or whatever or getting these distributed energy arrangements but in the longer term we've also got to have—it's got to be commercial and a business.

Professor HEPBURN — Yes.

Mr CRISP — And can you see a transition path between those people who are doing it for other than business reasons to get it to a business, get it ultimately to where I think it needs to go, you know, please feel free to disagree?

Professor HEPBURN — No—

Mr CRISP — To move it into business principles because often these things, if business is not at the core of them?

Professor HEPBURN — Yes.

Mr CRISP — If there's no transition they don't survive—

Professor HEPBURN — That's right.

Mr CRISP — the transition.

Professor HEPBURN — This is an excellent question, Peter, and this is one that we're examining because, you know, of course it's such – there's so much ideologies associated with renewable energy because of its connection to climate change and that whole sort of transitional process. However, the further you progress the element of the model which are the transactional certainty standardised framework for financial and transactional agreements and the further that you progress community engagement in terms of you saying, well we are actually setting up businesses here. This is a partnership.

This is going to facilitate investment. Then you are sort of infiltrating that commercial motivation throughout the community. Now, you know, it is just in some respects it's a challenge but you need to get on to this early because the ideology connected with unconventional gas has meant that effectively there is now a ban on that indefinitely in Victoria and that's interesting given that we are potentially facing a domestic gas shortage.

So we don't want that to—we want to avoid that situation and that involves strategic community engagement and that also involves getting that commercial aspect out and that you start with that by setting up the regulatory frameworks.

Mr CRISP — So to get this clear in my mind you're advocating that right from the start we need to have a sound framework that is business orientated rather than ideology orientated?

Professor HEPBURN — Absolutely, yes, and guidelines that support that as well.

Mr CRISP — Got you.

Mr KETT — But the difference I think with this as well, Peter, because, you know, that's what we're seeing with the viability of technology now so the business model is really being driven through that so

it's being adopted whereas previously we might have ideologically said, well, this is where we want to go but without the capacity to do that, there's been a gap. Now I think the two are combined.

Professor HEPBURN — And I might just, if I may, just add one additional point. The ownership explaining and the ownership principle is important because some of the ideology connected with things like unconventional gas stems from concerns about the depletion of ownership entitlements. Now that's not the case when you're engaging communities.

Mr NARDELLA — What are you talking about? Can you explain what you're talking about?

Professor HEPBURN — Yes.

Mr NARDELLA — I don't understand what you're saying?

Professor HEPBURN — Of course, sorry.

Mr NARDELLA — Sorry.

Professor HEPBURN — No, no, that's fine. What I mean is that it's sort of a bit like shut the gate, right of veto.

Mr NARDELLA — Yes.

Professor HEPBURN — Land owners saying no, you're not coming on my land but in fact of course the government owns the resources and therefore are able to license it out and of course they're able to go and obtain and facilitate the development of fossil fuels in the land because they own the resource.

Mr NARDELLA — Correct.

Professor HEPBURN — So there's this uncertainty. There's interface between land ownership and resource ownership and there's a conflict. It just generates conflict because owners can't understand why resource developers can access their land, why Metgasco, for example, in New South Wales can say, right, we're entering your land. They might have to get a consent arrangement but the land owner can't actually say no because they don't own the resources.

Contrast that with renewable energy which is basically an onshore situation where they do have direct consent and involvement. So with wind turbines you're essentially looking at a lease arrangement between farmers and, you know, wind energy companies and so in that situation you've got far more direct involvement in the ownership right from the outset which reduces conflict from the beginning you know because you're not saying, we're coming on here irrespective of what you think because we own the resources.

You're saying that you own the land, we would like to use your land in order to develop this community energy project in order to put wind turbines on your land. We would like to involve you in potentially setting up, you know, a localised community owned renewable energy model and so that right from the start you've got the land owner on side. So it's a difference in term of the ownership perspective.

Mr CRISP — Can I—

Mr NARDELLA — Go on Pete, I've got a couple but you go first.

Mr CRISP — I know I'm going to go across where Don talked this morning in the labs about grid stability and what I want to look and get on the record is about some of the engineering issues about grid stability and a dispersed generation. But also I go back to some of the things that Professor Samantha talked about too is again those costs involved of altering that grid.

What we heard this morning that we'll need to have very advanced communication systems to manage a multi directional grid and that's got to be paid for somewhere somehow and who pays for transitioning that grid. Is it all the consumer, is it the new generators being these disbursed generation, is it someone else?

Mr KETT — Do you want to—

Professor HODGSON — No, I think, it would be—

Professor HEPBURN — Yes, I can. Okay. So, you know, well, I mean we need to set that out of course who is going to pay. There needs to be clarity around it. I think that it's not necessarily controversial as to, you know, one or the other. Obviously the business model may end up paying up for a certain component and, you know, the State Government or community representatives might be inclined to pay for other aspect of it. It would depend on the funding again and that's going to—I'd need to have a sort of a budget allocation. But I think the most important thing is not—obviously it's who pays but how it's distributed.

So if you've got that clarity and then what happens in that situation is that the communities that are involved or localised, members that are saying, yes, let's get involved in this wind partnership, I think we know what the costs are. Okay. And if there's an upgrade we don't pay for that, that's not included in our particular model. This is paid for by maybe a private contractor, maybe a state fund, whatever. So what you have though is clarity in terms of investment from the beginning.

Mr CRISP — Perhaps to go to Peter.

Professor HODGSON — So I guess one of the reasons AusNet are very interested in working with us with the microgrid is it is a changing business model. Samantha is right, there are models out there which I think we can look at but the company—for these companies, it's not different to what they've been doing for the last 20 years. And so for them to get their head around these new business models is quite a challenge and so I think that's one of the reasons why AusNet really want to be involved is it's the technical issues and obviously there's technical issues.

But then there is actually what is the business model and how do you make, you know, money out of this. And so I think that we are seeing a game changing period and I think that more so things like, you know, cyber security, big data, all the stuff that goes, hangs off this stuff as well, because instead of having a centralised energy distribution system it's now quite decentralised and that brings a lot of challenges as well.

Professor HEPBURN — If I can just say an additional point. Obviously, you know, an important component and having talked to a couple of the wind companies, you know, their concern is always that the uncertainty about whether they will continue to have a right to use the land, you know, that the lease agreement will change. That's critical. So if you've got certainty on that front because you've got the communities involved because you've got the land owners involved then that changes the model as well.

Mr KETT — Just if I can just pick up to on that as well. I mean it's not just AusNet and AusNet is the transmission manager provider is dealing in or playing with microgrid developments. So we've got the distributors and we've also got the retailers in the space as well. So the waters are really muddy. There is total disruption in the market so we're all trying to grapple with what's the best way, the best model for this as we move forward. There could be a number of ways we can deal with how you pay for these systems in the community modelled transmission networks which are going to be fundamental there.

I mean AusNet obviously looking at how they sustain that into the future. Is it through developing microgrid systems and running those that will help to feed into, pay for the cost of maintaining transmission networks. I think we've got to be open to all these opportunities and really try and work through the model and also going to work best for us because everyone is in the same boat here. We're all trying to grapple with this rapid change and trying to find the solutions and no-one, I think, has got the answer at this stage.

Mr CRISP — I know this is the impossible question but from your experience how long do you think it's going to take for some of these waters to clear in all of these areas?
I know it depends a bit on what we do. It depends a bit on what you do but are we talking years, are we talking a decade?

Professor HODGSON — I would have thought within the next five years we're going to have to seek quite radical changes.

Professor HEPBURN — And we don't have that long. You know we need to accelerate renewable. It's

an imperative. I mean I think the businesses are already aware of that.

Professor HODGSON — Yes.

Mr KETT — Well, because it's already happening, Peter, I mean I think, and driven by consumers. Just look at solar battery uptake in households driving market change. That's grown significantly so that's driving change. We've got environmental issues that are pressing and the social awareness and consciousness around that is escalating as well so that's driving change too. Then we've got businesses now thinking how are they going to stay in business, how are they going to work into the future.

All those forces now are starting to drive it. So I think we don't have time for change, it will occur rapidly, so where I see the biggest challenges here are how are we going to deal with the policy and the regulation and the modelling around this to support that change because the change is already occurring.

The CHAIR — All right. Don't?

Mr NARDELLA — Thanks. I was never lucky that they haven't got any taxi licences in terms of disruption. I suppose we could always bring back the SECV but we won't. Can you explain please what communitarian values are?

Professor HEPBURN — Yes, of course.

Mr NARDELLA — Because you've put that up on your slide a few times.

Professor HEPBURN — Yes.

Mr NARDELLA — And I don't know what it is.

Professor HEPBURN — Okay. All right. Sure.

Mr NARDELLA — Just a brief definition please.

Professor HEPBURN — Yeah, yeah, yeah. Communitarian values probably stems from what I started with talking about cooperative norm. So the idea is that, you know, there are fundamental principles. When you live in a community that you should be entitled to be involved with projects that might have an impact on your health, upon the landscape, upon the environment, but also to have that opportunity to engage in how your community is going to evolve and that's particularly true within periods of transition and disruption.

So community values used to be, I suppose you know, being neighbourly and you know being communicative, involving yourself in community sport, it's rapidly changing within—particularly in the energy space where you've got community members wanting to be informed so the state, and the State Governments that are developing any sort of resource development have to make sure that they are communicating with members so informational transparency.

I suppose even accountability is a relevant aspect to communitarian values. It's quite an extensive concept but essentially it means engaging and being transparent and informing the community so that they have an opportunity to involve themselves in what is going on around them should they want that.

Mr NARDELLA — Thanks for that. With the business model and the question that Peter raised and there was a discussion about was that it needs to be grounded in a free market approach. Some would say a capitalist approach but a free market approach where you need to develop the business model and you need to work through a company structure and most probably have boards and shareholders and those types of things. And that's what you're saying in terms of having that as a prerequisite and people understanding that that's where it needs to go so it can actually work properly in the future.

Professor HEPBURN — Yes.

Mr NARDELLA — So has Deakin had a think about some tours or some policy or have they done it themselves in terms of a how to list, I don't know else, you're manual or whatever, whichever way you want to do it because that's what I think. I think a number of community groups are struggling if they're saying to us we want lawyers, we want business specialists, we want MBAs. We want people help us.

But has Deakin worked through that stuff?

Professor HEPBURN — We are and in fact the centre has a project on that right now. So we've got a half day seminar on this coming up in April in 2017 so, you know, effectively—and I'm using the stuff that I've got from the US because I mean they've progressed a lot of this. So we're not—we haven't finished it yet but that's certainly something that we are working on.

Mr NARDELLA — That's great. Thanks. And Ian talked a lot about the microgrid here and how it sort of may work in with certainly a number of the players like Epworth and some of the other businesses and others that are here, the carbon place, and the automotive place. But it's also the residences that are coming on board as well. So how are you looking at involving local people or those smaller companies in the development of the microgrid. I mean, have you been communicating with them? Have you been talking to them? What are the things that you're doing to involve them?

Mr KETT — So at the moment it's really been looking at the agreeable parties in terms of the development of the system, Don. We're trying to understand what the system looks like, its scope and capability. The external consultation has also extended to Epworth Geelong about their interest in being engaged in this. We certainly haven't gone to residences and so on.

We need to be able to look at the capability of this system before we go to that. But the potential is there for us and it depends on the level of investment in this you know to get the capacity we need but the potential is there for us to work with the modelling that Sam has already been doing in terms of well how do you make these transactions work.

Professor HEPBURN — Yes.

Mr KETT — How do you bring in a potential provider like an AusNet Services or even some of the others into this mix to make it all work and that's where we want to go but at this stage it's really trying to work out exactly the position.

Professor HEPBURN — And just to give you some idea just very briefly, you know, from the stuff that they're doing in the States they're getting land owners who have been involved in these projects to come together in community forums to discuss the positive aspects of their involvement with the renewable project and also of course incorporating universities because these two people are representatives who are trusted. Industry tends to not have that perception, you know, neutrality and so you start off with that at that level and then you can sort of move beyond that.

Professor HODGSON — The only thing I would add is that, you now, our experience particularly in Geelong region is that living experiments have much—have a lot more value than paper experiments. So by that I mean if we had something actually working which we can demonstrate then the community gets a much better understanding and we've also got a very strong track record. I think the advantage of having, you know, a regional envelope around us is the ability to actually showcase examples to the community quite effectively.

I think that the carbon cluster, for example, is an example where we said we were going to do one thing and now we've got six or seven companies all wish to be there. They can see the microgrid is actually there and an example of where we're going to translate. It's not research for research sake it's actually hard core doing and you know the people of this region really want hard core examples rather than sort of just a concept example.

Mr NARDELLA — Just for the record I had a talk about this to Ian on our way up the hill, can people explain the IP, intellectual property process that you have put in place to try and capture the value of the work that you're talking, just for the record really.

Professor HODGSON — What in general you mean?

Mr NARDELLA — Yeah, just in general because I think, I think when we're looking at some of these things it's important that, I think, people understand that there is intellectual property involved, that there is value in intellectual property and how does the university plus other companies or partners, the teams that you build, how do you capture that for the uni really.

Professor HODGSON — Okay. Yes. So we have a general process of IP management where we, obviously if it's something interesting, we will patent it, do a provisional patent, and then between the provisional patent and the full patent will go out to look for partners so all our commercialisation is usually only partnerships. It's very rare that we will invest in a start up company per se.

It's actually trying to find, you know, a marriage where we can bring say like AusNet, someone who has got skills and that take our idea through to full commercialisation. So we basically a provisional patent, we get 18 months between the provisional patent and the full patent to find partners. If that lapses then we feel that there's probably no value in it so we don't pursue it.

Mr KETT — And, Don, if I just add to that too, I think, in the case of the renewable area that as we progress and we form contracts with partners around what exactly we're going to do and how we do it, the IP discussions will become critical in that as to how we manage that and be determined in part by funding contributions to the system but also about, you know, what the parties bring to the table. So I think it's important that we try and get a position where the IP can be accessible to inform further community development and it's not just locked into you know one particular party.

There's value in the university coming into this space because we are relatively neutral here. I mean there are energy needs as an organisation but really there is a need for some independent authority around this that can help to inform that development. So as we form the partnerships with others we'll be very cognisant of that and be endeavouring to form the IP relationship, we'll do that.

Professor HODGSON — Across the whole university I can't think of one example where we've blocked – we haven't gone to a commercialisation outcome that we've been over protective without patent in our IP situation so we want to be a university that gets things out there.

The CHAIR — Okay. Well, that's a good time to thank you, Peter, Ian and Samantha for contributing. On behalf of the Committee I would like to thank you and I'm sure we will have more discussion at the luncheon, informal discussion. Thank you very much.

Professor HODGSON — Thank you.

Professor HEPBURN — Thank you.

Mr KETT — Thank you.

Witnesses withdrew.