

CORRECTED VERSION

ECONOMIC, EDUCATION, JOBS AND SKILLS COMMITTEE

Inquiry into community energy projects

Sydney — 15 February 2017

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Witness

Emeritus Professor Warren Yates, Board Member, ClearSky Solar Investments

The CHAIR — Good morning, everyone. I now declare open the Public Hearing for the Economic, Education, Jobs and Skills Committee's Inquiry into community energy projects. All mobile telephones should now be turned to silent. I'd like to welcome Emeritus Professor Warren Yates, Board Member, ClearSky Solar Investments. In accordance with Victorian legislation and reciprocal provisions in other Australian jurisdictions, all evidence taken at this hearing is protected by Parliamentary privilege as if you were giving evidence in Victoria. Therefore, you are protected against any action for what you say here today, but if you go outside and repeat the same things, including on social media, those comments may not be protected by this privilege.

Any reporting of this proceedings enjoy qualified privilege for fair and accurate reporting as if the proceedings were in Victoria. The Committee does not require witnesses to be sworn but questions must be answered fully, accurately and truthfully. Witnesses found to be giving false or misleading evidence may be in contempt of Parliament and subject to penalty. All evidence given today is being recorded by Hansard. You will be provided with an approved version of the transcript for you to check as soon as available. The verified transcript, PowerPoint presentation and the handout will be placed on the Committee's website as soon as possible. So, Professor, you may state your name before we begin and the floor is yours.

Professor YATES — My name is Warren Yates. I'd like to show a video to start with and then I'll give a brief introduction then answer questions.

The CHAIR — Thank you.

VIDEO PLAYED

Professor YATES — That was a brief introduction of our not-for-profit company, ClearSky Solar Investments. We're actually the brainchild of a climate action group, a community climate action group, Clean Energy for Eternity, which have been in operation since about 2006 and we've done lots of things, put solar panels on fire stations and on community buildings and surf lifesaving clubs, all with raising money through sporting events, big swims and the like, but in about 2013 we figured that we were just preaching to the converted and we wanted to access that section of the population who wasn't particularly interested in climate change, which is about 80% of the population, and we figured we could do that by showing that solar was a really attractive investment; forget about your environmental interests.

And so we tried to work out how could we set up an organisation that made it really, really easy to invest in solar and it will give a very good return, and our long term view is that those people who did invest would realise how good solar was and would spread the word and would actually change their vote to vote for governments which were in favour of solar. So we are fortunate that the New South Wales Office of Environment and Heritage, New South Wales Government, gave us a \$60,000 grant as part of their community energy program and we used that to do all the legals and the financials, set up a website, set up an administration system to make the whole thing viable, and we came up in a model which was really good in the sense that it enabled us to simply attract investors on the website when a project was ready to be funded to get the money very quickly, to invest it and then, over a fixed term, we'd pay the capital back to the investors along with interest every quarter.

So you've got all the information in front of you. I'd just like to finish with two really important concepts of what we are doing that made it successful. The first was that, as a community not-for-profit group run entirely by volunteers, we had to be very careful how we used our resources and we figured that the best use of our resources was not in finding sites, not in doing analysis, not in putting solar on roofs, but simply in financing solar projects. So we partner with a commercial organisation that does the running of the sites. They do the analysis. They do the installation. They do the maintenance. They do everything. They do the billing of the customer.

So all we have to do is raise the money from the community investors and send a bill to our commercial partner every quarter for the energy which has been generated and then distribute it to our investors, and that is something we can do with volunteer staff given we have a very efficient web based system to do it. So what we've done is only possible because of developments in technology that made it really, really easy to proceed in this way. I can talk about the risk and everything else but maybe I should open it to questions now.

The CHAIR — Well, thank you very much, professor. I should have introduced my Committee members. This is Don Nardella, Peter Crisp, Christine Fyffe, Cesar Melhem, Executive Officer Kerryn Riseley, Research Officer Dr Marianna Stylianou. How do you attract investors and how much do investors invest in each project?

Professor YATES — We had to keep our costs to a minimum, which meant we couldn't afford a financial services licence or to get a prospectus reviewed by ASIC and so there's a section of the Corporations Act which allows 20 likeminded people to form a trust, and so for each project we form a trust and we have a trustee company and we are limited to 20 investors. So depending on the size of the project, that divided by 20 is the investment that each investor has to put in. We don't insist on a particular investment. If one puts in more than one twentieth of the cost then someone else can put in less.

Just to give you a couple of examples, our most recent project was a Blackwoods' site which was 250 kilowatts and we had to raise \$540,000 and that involved—sorry, I'll take it back, in Bakers Maison it was \$350,000 and we had to raise \$17,000 as a minimum investment, but other projects have been as low as—like that one you saw on the video was quite small and the minimum investment would have been \$1,000. So it just depends on the project.

Mr CRISP — Probably looking at the financial model that makes this work is what I'm interested in. How have you been able to work through an investor's expectation of a consistent dividend versus what might be, in the commercial area, businesses that come and go or vary their energy consumption.

Professor YATES — That was a really important issue to address. We target very particular types of site. It has to be a site which uses power 365 days a year because it's entirely behind the meter. We simply substitute for the power they would have otherwise paid for from the grid and it's attractive to the end user because we can offer them power at a cheaper rate than they would have paid from the grid and we also can offer them a fixed price for the power for the term of the investment, which is between seven and ten years.

We also have to make sure that the business is going to be stable; it's going to be in business for ten years. So we do very good due diligence on the companies and so we're very selective in which sorts of companies we're prepared to invest in, but if they tick all those boxes then the only real variation is the amount of sunshine you get from year to year, because the amount of electricity we're providing for them is only about 30% of their total consumption. So it's not as though they're going to ever not use all of the electricity and, in any case, the contract that we sign with them, the PPA, requires them to pay 90% of the expected generation, even if they've got the system switched off.

So our investors are protected at least that they get 90% of the predicted generation but, of course, that's never happened on any of our projects. They're all getting whatever the generation was. We use Bureau of Meteorology data to look at 30 year averages of what solar radiation was and so in our predictions we've got fairly accurate predictions and, indeed, they have come out to be spot on in the projects so far and, because it's a ten year or seven year term, then averaged over those seven years you are likely to get pretty close to the prediction.

So with all those mechanisms we're pretty well covered. I can talk about other risk management but the other thing it's important to say is that we know our investors expect about a 7% return. Initially we started with 9% or 10% on more risky sites. Now we're going for more stable sites at 7% and the way we always achieve 7%—because every site is different; they're paying different amounts for their power—is we simply adjust the term to bring it because, as you can understand, the installation costs so much, it will be paid off in so many years and then the remaining years is the interest to the investors, and so by extending the term we can always bring it up to 7%.

Ms FYFFE — May I butt in? So when do they start getting that return on their investment?

Professor YATES — They get it immediately. So they put the money in and in the next—

Ms FYFFE — So if I invested today, the return would start coming monthly or quarterly after that?

Professor YATES — Quarterly after that, that's correct, yes, and the return consists of two components, a capital repayment component, so the capital is repaid evenly over the entire ten years, and an interest

component. So it's not like putting the capital in a fixed term deposit and getting it all back at the end, and our investors need to understand that. It's like you've got the full amount in for the first quarter or the first year, and then the next year you've got only nine tenths of it in and the next year you've got eight tenths of it in, but the overall interest payment over that time is equivalent to the amount you've had the capital invested in there.

Mr CRISP — You picked up 365 days a year. Not a lot of manufacturing businesses would operate—

Professor YATES — No, that's true. That's true and so—

Mr CRISP — How do you manage that risk?

Professor YATES — Well, we don't accept—all of our projects to date have been freezing works, poultry farms, supermarkets, licensed clubs, things which are open every day of the year or almost every day of the year. So we definitely can't do schools and typical, you know, five day a week manufacturing plants because the power we generated would go to the grid and get 8 cents a kilowatt hour and it wouldn't work. The business model wouldn't work. But there are certainly more than enough operations which do operate 365 days a year to keep us going.

Ms FYFFE — You choose the company carefully.

Professor YATES — Yes.

Ms FYFFE — You do a due diligence on them—

Professor YATES — Yes.

Ms FYFFE — and decide that, yes, they can have the solar panels. Do you also ask, 'Well, are there energy efficiency agreements?'

Professor YATES — Yes, we do. In fact, the commercial company that we're dealing with, it works in both energy efficiency and in solar, and so the first call is to make sure that they're the most efficient they possibly could be because we don't want them to be reducing their power over the next years. All that efficiency innovation is to be done up front, and that's very important to us as a community organisation trying to reduce greenhouse gas. That's our ultimate objective and quite often we find that the company says, 'Well, we've got a certain amount of capital. We'd rather spend it on energy efficiency and that means we can use you to give us free panels rather than spending our money on panels.' They spend their capital on energy efficiency and we provide the panels for free.

Ms FYFFE — So your agreement is with the owner of the building and you've also got the tenant?

Professor YATES — That's correct. We either deal with owners directly or we deal with the lessee and get the owner to sign off permission and all the other legal things that have to be done.

Mr MELHEM — So the basis of your investment model is getting that 90% guaranteed or you'll get the customers on the book for 90% of the potential duration whether they use it or not. That's really how the money is made because competing with the cost of a solar panel generation versus a coal power station I suppose you don't have the costs of the grid to transfer the power from the generation point to the customer. That's a bit of a saving to have the sort of system—

Professor YATES — Yes, again, as a community organisation who is keen to reduce greenhouse gases, we are constantly lobbying governments of all persuasions that the entire Australian electricity grid needs to be reformed and you're going to get terrible distortions if you don't reform the grid and don't reform the pricing of the grid, because what's going to happen is the rich people are going to put solar panels on their roofs, they're going to put batteries in their houses, and the rest of the community will be left to pay for the grid. And so we need reform. We desperately need reform to the Australian energy market operators and we need to do it so that it's possible to transfer power from solar panels to other users in a more efficient way.

The market needs to work there. The current system is totally out of date. It's not dealing with it. But if governments don't change things then this is exactly what's going to happen. People are going to put solar on

their roofs; they don't have to pay the cost of the grid. They will be all right, Jack, but the rest of the community will suffer.

Mr MELHEM — And that's what I was leading to.

Professor YATES — Yes.

Mr MELHEM — That's why I explored that a bit further.

Professor YATES — We're a group which is trying to work because governments aren't working, and so we're doing what we can because, by God, we need to the governments to actually reform the grid as every other country has.

Mr CRISP — What would be the parameters for the reform you see that's needed in the grid?

Professor YATES — Well, the parameter is we've got to change the pricing structure so, rather than people—we need to have time of day charging, okay, so that if you're using power at peak time you've got to pay for it. We need to have the opportunity for people to be able to export power at a price which is related to what the market price of electricity is at that time. We need to make virtual net metering possible so that if you've got multiple sites, like the council, and you've got solar panels on one building then you can use the power on all your sites. You need to be able to have contracts between a solar farm here and somewhere in another city where they can use that power, and we need to really look at the whole grid so that you can ensure that power can be moved from where the sun is shining to where it isn't shining in an efficient sort of way, and other countries have done it. I mean, Germany has done it, the UK has done it, and it's very overdue in Australia.

Mr CRISP — Do you see a risk in the maintenance and security of the grid with your proposal? I've got a concern that if no one is forking out the dollars to maintain the grid then the security that the grid offers and—

Professor YATES — Yes, the grid needs to be a different sort of business. It needs to be like the telcos changed to being a pipeline for all sorts of services. So the grid should be a transport mechanism for energy and it should make its money out of transporting energy and the energy could come from individual houses or businesses exporting or it could come from power stations or wind, all these distributor generators. It needs to change its business model. Its business model currently is that you've got all these generators in a few places around the country and it's all one way and it's not seeing itself as being an innovative transport mechanism for energy, which is what needs to happen.

Mr MELHEM — So in practical terms how would you change it? I mean, look at Victoria, for example. Our concentration is one spot in the Latrobe Valley. We've got the odd gas fired power station and we've got a diesel one and Newport, et cetera. So, basically, in practical terms, in laymen's terms, you decentralise where the power is generated—

Professor YATES — Yes.

Mr MELHEM — so instead of one spot you'll have—

Professor YATES — Yes, exactly.

Mr MELHEM — many power stations all over the state?

Professor YATES — Well, you'd have very many, so on individual roofs you'd have solar farms, you'd have factory roofs, you'd have wind generators, you'd have a complete distributor network, and you'd redesign the grid so it had lots of intelligence in it so it would know where the power was being generated, where it was needed and it would be able to send signals to consumers as to what the current price was so that they could actually change their demand, depending on the price. What it needs is—and, you know, I confess that I'm a university academic—I think it needs research from the Australian energy market operator or someone, CSIRO, to figure out how the Australian energy grid needs to be transformed to meet the future.

Mr MELHEM — Okay, just on that, so that's where we want to be, let's say 2050 zero emission, 2050 or 2040 or 2030.

Professor YATES — Yes.

Mr MELHEM — Let's say 2050 for this argument. Base load power, we've heard the debates about New South Wales last week or this week and South Australia in the last six months. Putting politics aside about—

Professor YATES — Yes, sure.

Mr MELHEM — Renewable versus coal, in order to move from the current generation method, which is largely coal, to 100% renewable, what do we need to do in the interim to maintain that base load power, to maintain security? And also I'm interested in making sure businesses don't suffer, because they still need base load power. I mean, like Alcoa, for example, with the aluminium smelter, we can't just chuck them out because—

Professor YATES — No.

Mr MELHEM — it's important to maintain them. So what do we do in the interim, from your point of view as an academic?

Professor YATES — You need a transition plan and the transition plan would involve strategically located storage, either battery or pumped hydro, and, as you're rolling out your distributed generation, you'd also be rolling out your distributed storage. You also need to look at the connections on the grid, on the entire national grid, so that, when things aren't working in Victoria, you can import power from places where it is. So that's why it needs a transition plan to say, 'Okay, to get from here to here, here's the little steps we're going to take in such a way that we maintain viability of supply; that's absolutely essential. Now Finkel is going to do that I think and I'm very pleased that there is this—

Mr MELHEM — Yes, but how do you overcome, for example, I think the experience in South Australia last week or the week before where a decision was supposed to be made about turning on one of the generators and that decision was—and I take it, it probably was a commercial decision—there's not enough to actually fire it up for just the sake of a day. How do you overcome that? Do you legislate that the generator must turn on regardless of commercial cost?

Professor YATES — Well, this is the great challenge of having privatised infrastructure. How do you do the regulations so that people don't just act in their own commercial interests rather than in the national interest? That's what good regulation is about. Now, I don't know how you do it but you probably do need to say, 'If it's in the national interest you've got to do it,' or you subsidise them for turning it on and off for a short time.

Ms FYFFE — Yes, I think what has happened in South Australia has at least started the conversation.

Professor YATES — That's right, yes.

Ms FYFFE — Yes, and everything starts from a conversation.

Mr CRISP — Perhaps, Professor—

Professor YATES — But you're getting me on the hop. I really should be talking about ClearSky, I think.

Mr CRISP — Yes, that's right.

Mr NARDELLA — Well, we are, I think.

Mr CRISP — To bring it back, legal costs, are you prepared to give an idea of what percentage of a project is used in legal costs? Because we've looked at a lot of communities that have begun with an ideological desire and then it's a very steep hill to climb, and you've climbed that hill but—

Professor YATES — It is.

Mr CRISP — the sort of security you have to have to be a business model

needs some legal costs. What's the cost?

Professor YATES — Well, the thing is that we replicate everything, so the legal costs were all up front, okay. There was \$60,000 paid for the legal costs to set it up but we didn't use it all on legal costs. We—

Mr CRISP — Was that to set up ClearSky or to set up the contracts?

Professor YATES — That was to set up ClearSky and all the contracts. So we had to do three contracts. There was a contract between ClearSky and—actually, there's a contract between each trust and the commercial provider, there's a contract between ClearSky Solar Investments and each trust, and there's a contract between ClearSky and the commercial provider, and there's a trust deed, a specific trust deed. So they are just replicated for each project, so there's no more legal costs as we set up each project.

Mr CRISP — Can I be indulged for a moment because I think this is important?

The CHAIR — Yes.

Mr CRISP — Professor, can you draw it? You've got ClearSky—

Professor YATES — Yes, let me draw it.

Mr CRISP — Yes, I want people to know how they're related to each other to make your model work.

Professor YATES — Yes. That's the company, okay? And we've got Smart Commercial Solar as our commercial provider and we have then a trust, which is related to a project.

Mr NARDELLA — Do you only use the same provider all the time?

Professor YATES — Yes. We can use other providers but it's taken us a lot of effort to build trust with this provider and so, in due course, when we get bigger we'll have other providers. However, Smart Commercial Solar has divided itself into two companies, one of which does analysis for all installers and so we actually work through—they just do the analysis on the building. Then we've got a trustee company to run a trust. So here it goes. The trust and Smart Commercial Solar have a contract and the contract is that, whatever generation occurs, Smart Commercial Solar will pay the trust. Smart Commercial Solar owns the panels and at the end of the ten years they're owned by the project and the only contract is that they will pay us for the generation.

There's also a contract between the trustee and ClearSky Solar because ClearSky Solar does all the administration to keep the trust operating. It submits its tax returns, it collects the money and does all negotiations. And then there's a trust deed associated with this thing. So these contracts—that one, that one, and the trust deed—we had to get legal advice and pay for that to get done but, now that it's happening, whenever a new project comes up, we set up a trust using the same documentation. We set up a trustee company. This costs us \$500 to set up a trust—that's standard in New South Wales—and it costs us \$249 per year to pay for the trustee company and it costs us \$469 to set up the trustee company. That's it; they're the only legal costs for the whole operation.

The CHAIR — Thank you for that, Professor. There's just one more question from me, please. Can you provide examples of where your project has supported the local economy and created local jobs?

Professor YATES — Well, on most of our projects our local installer does the installation but, you know, that's a one-off, really, and I don't think it necessarily does, to be honest, support the local community because the investors come from all over Australia.

The CHAIR — What about local jobs?

Professor YATES — The installation itself, that might take two days. It's not really a big job.

Ms FYFFE — Does the company where the solar panels are installed make much savings over their power bills over the period of time?

Professor YATES — Yes, that's true.

Ms FYFFE — That would make them more profitable and might encourage them to employ more people.

Professor YATES — Yes, that's quite right. I hadn't thought of that one, yes.

The CHAIR — Have you found that projects are more easily delivered in some states than others and what can Victoria learn from other states?

Professor YATES — We haven't actually. We've got projects in Queensland, New South Wales, Victoria, Western Australia and they all work on this model. Actually, in Queensland there was a problem in connecting. Yes, it took a long time to get approval to connect. We got the money from the investors and it took about six months before we got connection approval, which was a real worry. But, again, our contract with Smart Commercial Solar was that they paid us the 90%, even though there was no generation, and so the investors got pretty much what they expected.

Ms FYFFE — So was the slowness in Queensland, do you think, because you were doing something outside the box—

Professor YATES — I think so.

Ms FYFFE — and they were having trouble grappling with it?

Professor YATES — Yes, it was our first project in Queensland and it was something outside the box, but the one in Victoria in Mildura at Murray River Organics—

The CHAIR — Professor, on behalf of the Committee I'd like to thank you for your time and the evidence you've given to the Committee. Thank you very much.

Ms FYFFE — Thank you very much, Professor. That was interesting. You make it sound simple.

Professor YATES — It is simple. I wish you well in your remaining deliberations.

Ms FYFFE — Thank you very much.

Witness withdrew.