

Sincere thanks to The Viscount Brenchley for kindly improving every aspect of this article

“MAJOR PROJECT STATUS” SCANDAL

TO GIVE AND NOT TO COUNT THE COST 25 August 2020

Michael Darby invites the Australian Government to count how many beans make five before it sanctions an ill-costed and environmentally-disastrous undersea extension cord from Darwin to Singapore with an undisclosed contribution by taxpayers so that costly, subsidized, intermittent, unreliable, short-lifespan “renewable” energy can be “sold” to ASEAN nations.

Capital expenditure for the intended Australian-ASEAN power link (Australian dollars)			
Item of capital expenditure	Claimed	10 hr backup	60 hr backup
Solar farm 10 GW nameplate (3 GW dispatchable)	<i>Not Itemized</i>	A\$ 13 bn	A\$ 13 bn
Battery storage (10 hrs backup, so no reliable delivery)		A\$ 18 bn	---
Battery storage (60 hrs backup, so constant base load)		---	A\$ 108 bn
Transmission line 450 miles from solar farm to Darwin		A\$ 1 bn	A\$ 1 bn
Undersea cable 2300 miles from Darwin to Singapore		A\$ 44 bn	A\$ 44 bn
Transformer, Inverter		<i>Uncosted</i>	
Approvals, insurance, marketing			
Decommissioning bond			
TOTAL	A\$ 22 bn	A\$ 76 bn	A\$ 165 bn
Excess of 10hr & 60hr bkup costs over claimed cost	---	+250%	+650%
Excess cost against A\$ 14 bn 3 GW coal generation	+60%	+450%	+1100%

Table 1: True capital cost of the undersea cable scheme vs. claimed cost and vs. coal

The Government of Australia has granted “major project” status to what its proponents say will be a A\$22 bn solar, storage and transmission project with the aim of peddling unreliable energy to Singapore by undersea cable from Darwin.

The Australian Government has fast-tracked the project, which – it is asserted – could provide up to a fifth of Singapore’s electricity. The official estimate of the cost of this boondoggle is A\$22 bn (US\$16 bn). The idea is to run a 2300-mile high-voltage direct-current cable from Darwin to Singapore to connect a 10 GW solar and 30 GW battery storage plant south of Darwin with Singapore and eventually Indonesia.

By the end of 2027, Sun Cable, the developers, predicts the undersea cable will enable it to export A\$2 bn (US\$1.5 bn) of solar energy per year to Singapore, connecting Australia into the ASEAN power grid.

Table 1 shows the capital expenditure that would be required for the touted claims of the extension-cord boondoggle, which despite the unacceptably high cost cannot ever deliver reliable energy, for a mere 10 hours’ backup for solar panels is risible. The true capital expenditure for a scheme making proper allowance for 60 hours’ backup is also shown. The cost and the vast environmental footprint are manifestly excessive compared with the modest cost and minuscule environmental footprint of coal-fired power.

Projects declared by Canberra to be “major projects” receive help with regulatory approvals from a quango called the “Major Projects Facilitation [Agency](#)”¹. Major-project status is explained at the Federal Government’s [website](#)². Among the listed criteria for that status is the notion that “The project has sufficient financial resources and is commercially viable.”

The website says: “Developers need to show that the project has attracted enough funding, at least enough to complete the approval processes. You’ll need evidence of adequate funding and support such as evidence of support from governments and communities, resolutions of support from the board of a parent company, a letter of support from a parent company or investor, letters of intent, heads of agreement or other commercial documents, offtake and supply agreements, audited company accounts, feasibility studies, business cases or financial-viability assessments”.

The insistence upon commercial viability is reinforced by a reminder that the project must cost more than A\$50 million; that it requires the Australian Government’s approval or involvement; and that it has sufficient funding and is commercially viable.

As Table 1 shows, there is no possibility that the project can be commercially viable. Where is the evidence of support from the Indonesian and Singapore Governments? Which Aboriginal community and which pastoralist have offered the required 150+ square miles of land for the solar array? Which communities have welcomed high-voltage direct-current power transmission lines slung across their land?

In the absence of answers, the probability is high that no attempt was made to satisfy the criteria for major-project status. We are entitled to conclude that no responsible person in government made any effort to review the claims or check the numbers.

Every rational commercial project begins with an unmet demand. Spruikers for the Australian ASEAN Power [Link](#)³, better described as the “extension-cord project”, have provided no indication of demand or need in mostly gas-fuelled Singapore for any quantity of electrical energy emanating from Australia.

Singapore’s [industries](#)⁴ include 20% of the world’s ship repair, petroleum refining and major biotechnology research operations, heavily commercialised medical tourism, and frontline entities in information and communications technology. All of these entities, plus every arm of the Singapore Government, will demand unequivocal guarantees that all imported energy be continuous, uninterrupted, base-load power.

In 2016, Singapore’s total consumption of electricity was [reported](#)⁵ as 47 TWh, of which the 20% supposedly contributed by the extension cord would be almost 10 TWh. At the current Singapore [price](#)⁶ for business electricity of A\$0.2032 per kWh, the value of 10 TWh is close to A\$2bn, the revenue claimed by Sun Cable on its [website](#)⁷. A fifth of Singapore’s electricity consumption is the equivalent of supply at a continuous rate of 1 GWh h⁻¹ (GW).

The Sun Cable website makes reference to 3 GW of dispatchable electricity, but the nameplate capacity of the monstrous solar subsidy farm it proposes to build is 10 GW, for at best 10 GW of nameplate solar power will provide the nameplate capacity for about a third of the time. For two-thirds of the time the power will need to be stored. But because stored power is subject to losses, we need to generate enough stored power to carry the load for 80% of the time, knowing that 20% will be lost. So 10 GW nameplate solar power, supported by whatever backup is required, can be expected to provide about 3 GW of continuous power, which is Sun Cable’s estimate.

The [Basslink](#)⁸ high-voltage direct-current interconnector between Victoria and Tasmania has 0.5 GW capacity. Basslink is 230 miles long – about a tenth of the proposed extension cord to Singapore. Basslink’s 2005 build cost of A\$800 million is A\$1.1 bn in today’s dollars, according to the Bureau of Census and [Statistics](#)⁹.

The undersea cable component of the project, according to the Sun Cable website is 2300 miles. Building and installing a 0.5 GW undersea cable for 2300 miles over much more difficult undersea terrain than Bass Strait would cost not less than A\$11 bn in 2020.

The undersea cable is intended to carry six times the wattage of the Basslink cable. In the hope of finding some economies of scale, we can base the cost per mile at four times that of Basslink. That puts the cost of the undersea cable at A\$44 bn, roughly twice the \$22bn claimed by Sun Cable as the entire capital expenditure for the project.

A wise electrical engineer estimates that the copper component of the undersea cable carrying 3 GW will weigh 150 kg m^{-1} . At the current copper price of A\$9000 per tonne, that is \$5 bn worth of copper alone in the Great Extension Cord.

The Electrical Engineering [Portal](#)¹⁰ suggests that the capital cost of 750km of 2 GW high-voltage direct-current cable is around US\$450 million, or A\$625 million. To adjust the cost from 2 to 3 GW we add 50% to give A\$940 m. This can confidently be rounded up to a billion dollars to cater for remote-area costs, bringing the total capital expenditure for overland and undersea power transmission to A\$45 bn.

The website for the extension cord [asserts](#)¹¹ that a 30 GWh storage battery will “enable 24/7 dispatch of power”. Yeah, right. The Highview liquid air [battery](#)¹² with a capacity of 0.25 GWh (compared with the 0.15 GWh capacity of the A\$100 million Tesla battery in South Australia) is being built near Manchester, UK, at a cost of almost A\$150 million, or A\$600 million per GWh. At the same cost per MWh, a 30 GWh storage device will cost A\$18 bn.

The per-GW capital cost of a solar farm in 2020 is estimated by [Solar Mango](#)¹³ at £720 m, or A\$1.3 bn. That implies A\$13 bn capital expenditure for 10 GW of nameplate solar-generated electricity.

Here is how the CAPEX looks so far:

Solar farm with 10 GW nameplate capacity	A\$13 bn
Proposed 30 GWh battery storage	A\$18 bn
Transmission of 450 miles from site to Darwin	A\$ 1 bn
Extension cord for 2300 miles to Singapore	<u>A\$44 bn</u>
TOTAL	A\$76 bn

30 GWh of storage provides ten hours of backup for 3 GW of dispatchable power. I estimate that guaranteeing genuine round-the-clock 10 GW power will require 60 hours of backup, or 180 GWh. The cost of 180 GWh of backup is A\$108 bn. Even 60 hours may not be enough. Northern Territory residents report that the wet season commonly brings six or seven consecutive days when rain and cloud allow maximum 10% output from solar panels. Worse, a single severe storm is capable of disabling or even destroying a major installation.

In early 2018 Siemens AG delivered to China a [transformer](#)¹⁴ with capacity to operate a 2000-mile high-voltage direct-current transmission line at 1100 kV. The Sun Cable project will need a similar transformer and an inverter, but these are uncoded in the project to date.

Also uncoded is the process of obtaining permissions from governments and from Aboriginal communities; bonds for decommissioning; insurance premiums required to protect the project from claims when the extension cord is severed by an undersea volcano; and the PR campaign to persuade the Singaporeans that they need to import electricity costlier than their current current and that electricity from intermittent sunlight will be continuous and reliable.

Transmission losses in high-voltage cables [reportedly](#)¹⁵ approach 1% for every 200 miles. Therefore, 2750 miles’ total transmission distance means budgeting for 14% transmission losses. Transformer and inverter losses are unknown, and a cautious 4% is suggested. So 3 GW dispatched from the solar farm may amount to only 2.5 GW delivered.

The Pavakarda [Solar Park](#)¹⁶ in the South West Indian State of Karnataka (formerly Mysore) uses 33 square miles for a nameplate capacity of 2 GW. So 10 GW of nameplate capacity will need 165 square miles.

Despite fewer challenges of distance, the 2009 Desertec [Plan](#)¹⁷ for exporting solar-generated power from North Africa to Europe failed [abjectly](#)¹⁸.

Nuclear power and coal each offer far more rational ways of supplying 3 GW of reliable energy, the intended dispatchable power from 10 GW of solar panels. As reported in April 2020, Poland is [planning](#)¹⁹ to invest in nuclear reactors at US\$4.5 bn or A\$6.3 bn per GW. For 3 GW of safe, reliable continuous nuclear energy, the capital cost is A\$19 bn, well below even the vastly-underestimated A\$22 bn capital cost talked of by the backers of the extension cord project.

According to [Schlissel et al](#)²⁰, the capital cost of a coal-fired power station is around US\$3.5 bn or A\$5 bn per GW. For 3 GW of safe, reliable, continuous coal power, the capital cost is below A\$15 bn.

The electricity needs of Singapore or any other potential market would thus be cost-effectively served by nuclear or coal-fired power generation, without any of the enormous environmental harm inherent in the extension cord project, and without the obvious hazards of undersea volcanos.

In the Democratic Republic of the Congo, the [Grand Inga Dam Project](#)²¹ is intended to produce 40GW of energy from hydroelectricity, building upon the 1.8GW produced since 1982 by two existing dams at Inga on the Congo River. Setting aside [concerns](#)²² about the possible impact of drought on reliability, the Grand Inga Dam Project is costed at US\$80bn, which includes the capital cost of power transmission to at least five nations. This puts the capital cost of a major hydroelectric project at around A\$3bn per GW.

From above is the comparison of capital costs for the delivery of 3 GW of continuous power:

Electricity source	Capital Cost	Lifespan
Hydroelectricity	A\$9bn	>100 years
Coal fired	A\$15bn	>50 years
Nuclear energy	A\$19bn	>50 years
Claimed cost of solar	A\$22bn	<30 years
Real cost of solar	A\$76bn	<30 years

Why would a government grant “major project status” to a scam? A contributing factor to irrational behaviour by Australian legislators is their apparent willingness to cede sovereignty and decision making power to international organisations which consistently act contrary to Australia’s interests. Here a two of uncounted examples.

On 12 August 2020 the leftist Australia Institute hosted an internationalist bureaucrat named Elliott Harris (Trinidad and Tobago), whose Bachelor of Science [degree](#)²³ was awarded in German and political science. Mr Harris is described as having also an advanced degree in economics. This bureaucrat should not be confused with Elliott Harris the highly respected

plumber based in Varsity Lakes, Queensland, who by contrast is a talented tradesman who earns his living by giving great value to his customers.

Bureaucrat Harris may have appeared by courtesy of technology or, befitting his status as a chief economist for the United Nations may have bypassed quarantine restrictions so he could urge Australia to "*prioritise climate action above pouring money into fossil fuels in its coronavirus recovery*". SBS has enthusiastically and uncritically quoted [Mr Harris](#)²⁴:

Developed nations such as Australia must be willing to make difficult decisions and prioritise a "green recovery". "What we've seen in this COVID crisis is that governments are indeed capable of really ambitious, rather unorthodox, extremely important and even massive interventions. I can think of no stakes that are higher than the climate crisis that we are living in right now. We will not be able to sustain life on this planet if we do not get a grip of climate change and time is running out. We have to be able to move toward a low carbon structure and everything that we do from now has to have that in mind.... The fact of it is that, unfortunately, the world does not have the luxury of allowing itself of continuing (sic.) down the path of fossil fuels." This from a man with zero scientific qualifications and Marxist economics.

Perhaps embarrassed by [revelations](#)²⁵ that it spends twice as much on travel as it does on medical supplies, the World Health Organisation has released a slickly produced [video](#)²⁶ which appeared on Facebook on 24 August 2020, accompanied by this blurb:

The WHO Manifesto for a healthy recovery from COVID-19 lists 6 steps to create a healthier 🇺🇸, fairer ⚖️ and greener 🌱 world while investing to maintain and resuscitate the economy

This is the verbatim text of the script, which should be carefully analysed for its merit as skilful propaganda.

2020 has turned all our lives upside down it's brought terrible suffering and loss. But it reminded us what matters most, the health and safety of the people around us. It has also shown us what we risk when we upset the delicate balance between people and planet.

And we cannot afford to simply go back to the way things were before the pandemic. That's why WHO has published a manifesto with six steps to take to ensure a healthy and green recovery From COVID-19 .

- 1. To cherish and protect the source of all human health, the natural world.*
- 2. To invest in vital life saving services like access to water and sanitation and clean energy in healthcare facilities*
- 3. To quickly transition to clean renewable sources of energy*
- 4. To switch to healthy and sustainable food systems*
- 5. To make all our towns and cities green and healthy*
- 6. To shift from an economy driven by profit and pollution to an economy driven by fairness and wellbeing.*

We know what we need to do. We have the tools to do it let's work together now to create a healthier and greener world.

Here we all are imagining that the Wuhan Virus pandemic was caused, whether through malice or negligence, by the escape from a laboratory of an unpleasant man-made virus which should never have existed. And all the time the real cause of the pandemic, as explained by the World Health Organisation, is that we **upset the delicate balance between people and planet**. This Communist manifesto, if implemented, will inflict misery, poverty, truncated life spans, slavery and war.

These two examples of deliberate assaults on Australia's sovereignty demonstrate that Australia should have nothing more to do with the United Nations and nothing more to do with the WHO. Neither organisation has anything to offer Australia.

Indonesia in Kalimantan has a very large reserve of thermal coal which is inexpensive to mine and which is generally close to inexpensive barge transportation to ocean ports for transshipment or for direct delivery to Indonesian power stations. In 2019 Indonesia exported [453 million tonnes](#)²⁷ of coal and has 243 years left at current [consumption](#)²⁸. It is beyond ridiculous to suggest that a rational Indonesian Government would prefer to import unreliable Australian electricity rather than develop Indonesia's own coal-fired power industry.

A coal-fired power station will operate safely and reliably for more than 50 years, delivering at least seven times the energy used in construction and decommissioning. Modern nuclear power stations may last a century. In the unlikely event that the proposed solar subsidy farm in the Northern Territory is ever completed, it will function for a maximum of 30 years, by which time its output will have degraded by at least 8% (before allowance for dust abrasion and major storm damage).

Nobody knows whether 15 years might be very optimistic for the life of the gargantuan battery. During that claimed 30 years of solar farm life, the extension cord project might well deliver less energy than was used in solar-panel, battery and powerline construction and decommissioning. The project may actually reduce the world's available energy. And the profiteers will have been enriched at the expense of the rest of us even if not one kWh reaches Singapore.

The Snowy Hydro 2.0 pumped storage [scheme](#)²⁹ plans to deliver 2GW of dispatchable, on demand generating capacity and 350GWh of storage for a capital investment of up to A\$4.5 bn. This is not an argument in favour of Snowy Hydro 2.0 but the comparison is a damning condemnation of the energy storage plan of the extension cord project, which intends to provide one eleventh of the storage capacity for four times the cost.

Snowy Hydro 2.0 is a serious error of judgment, motivated by dangerous political ideology rather than good sense. The \$1.8 bn direct contribution from hapless taxpayers will never be recovered. The construction costs will blow out severely. The costs of electricity transmission infrastructure will have been seriously underestimated. The Prime Minister who in my hearing asserted that "Snowy Hydro will power up Australia" will learn that every GWh of stored energy in the form of elevated water residing in Tantangara Reservoir will have required (including pipe friction in both directions) as much as 1.25GW of energy to pump it there.

The 500MW pumped hydro Wivenhoe Power Station below Queensland's Splityard Creek [Dam](#)³⁰, which I have inspected, has since 1980 done an excellent job of extending the utility of a reliable coal fired power station.

In Scotland the 440MW pumped hydro Cruachan Power [Station](#)³¹ operating between Loch Awe and the Cruachan Dam, which I have not inspected, has since 1965 done a great job of extending the utility of a reliable nuclear power station. The cost of the Cruachan Dam and Power Station was £24.5m or in 2020³² money £490m, which equates to A\$891m.

The Cruachan pumped hydro operation can deliver 440MW at a 2020 capital cost per MW of A\$2.025m. The 22 hour (9.68 GWh) capacity is more than enough, because, like the Wivenhoe power station, Cruachan never has to stand in for a source of energy which has stopped producing. Snowy Hydro, if it astonishes by sticking within its \$4.5bn budget, will

have a capital cost of A\$2.250m per MW. It will be able to deliver its 2GW for 175 hours, or seven days. Replenishment will then require around ten days at 2GW. This presents a very serious and insurmountable problem because the capacity of solar panels and windmills to provide 2GW of energy cannot be predicted. The existence of Snowy Hydro 2 will be a permanent threat to industry in Eastern Australia and a constant source of anxiety for the poor and disadvantaged.

Snowy Hydro must be scrapped and all subsidies to unreliable energy must cease. Private investment will then have no difficulty providing safe reliable affordable electrical energy from coal and nuclear.

Like Snowy Hydro, like the 392MW nameplate Ivanpah Solar [Facility](#)³³ in the Mojave Desert, like windmills each chewing A\$300,000+ each year, this unspeakably irresponsible extension cord plan must be stopped. The figures and logic displayed above are more than a conclusive indictment of one immense scam. Every proposal to link unreliable energy to any grid is automatically suspect. The default position is that every estimate of cost will be recklessly understated and every estimate of performance will be exaggerated and every subsidy will be craftily hidden.

The proponents of the extension cord scheme [advise](#)³⁴ that integration of the project with the developing ASEAN [power grid](#)³⁵ is being assessed in the development phase. This is no favourable recommendation. Here is an extract from Renewable and Sustainable Reviews Volume 67 of January 2017, *ASEAN power grid: A secure transmission infrastructure for clean and sustainable energy for [South-East Asia](#)*³⁶:

Furthermore, unbalanced economic development prevents the development of renewable energy based generation. Therefore, most of the electricity in this region is generated from fossil fuels, which in turns increase the CO₂ emissions of the region, Geographically distributed renewable power generation can be promoted by integrating the ASEAN energy market in order to expedite cross-border trade and free movement of green electricity within the ASEAN region.

The entire referenced article leaves no doubt that the ASEAN power grid is firmly in the grip of global warming cult ideologues. Their aim is to infest South East Asian coastlines with offshore windfarms. The economic prospects for participating nations, and the welfare of their citizens, will be inversely proportional to the expansion of the ASEAN power grid.

Ways to profit from a gigantic scam include subsidy and tax-benefit farming, and also share-ramping. No government should bestow Major Project Status on a doomed scheme where no profit will ever be made from selling a product to a willing buyer. Australians should demand the Prime Minister guarantee that not one cent of public money will be committed to any such fraudulent scam.

Any government which endorses such a scam deserves to be brought down electorally. Who will receive a reward from the Chinese Communist Party for billions of dollars worth of materials and/or components for useless solar panels? Any fund manager who goes anywhere near a scam will be exposed. Any individual who encourages any private investor to contribute to a scam will be committing an unconscionable crime.

Australia has a highly educated parliamentarian, Rhodes Scholar the Hon Angus Taylor B. Ec., Ll. B, M. Phil. (Econ.), MP. He bears the shameful title “Minister for Energy and Emissions Reduction”, which institutionalises Governmental war upon reliable, affordable, base-load energy and gives undeserved credence to the false tenets of the global warming cult.

The 29 July 2020 joint media [release](#)³⁷ attributes to Minister Taylor the following fatuous remark: *“As technologies change, we can capitalise on our strengths in renewables to continue to lead the world in energy exports.”*

There are no “strengths” in “renewables”. Every increase in renewable energy inflicted on a grid destabilizes the power supply, weakens the nation, drives up electricity costs, impoverishes the poor and threatens the elimination of industry or its transfer to corporatist and Communist regimes who are not bound by the Paris climate accord and would pay no attention to it even if they were. See the Geoff Sherrington graph of Australian retail power [prices](#)³⁸.

A 30 July 2020 [article](#)³⁹ from the Economic Times attributes to Minister Taylor this description of the project:

“strategically important for Australia, the world's top coal and liquefied natural gas exporter, to remain a major energy exporter, and for its potential to create hundreds of jobs.”

The easily demonstrable truth is that every investment in unreliable energy inflicts net job losses. How many jobs would a genuine market-oriented investment of \$22bn create?

Also named in the joint media release is another well-educated parliamentarian, The Hon. Karen Andrews, B. Eng. (Mech.), Cert. Mediation, Grad. Dip. Ind. Rel., MP, Minister for Science and Technology. The media release admits that the intention is to spend abroad \$14bn of the fictional figure \$22bn. Minister Andrews is quoted thus:

“This project draws on Australia’s world-class solar technology and our high-tech manufacturing capability to export renewable energy on an unprecedented scale. Not only will this power link make Australia a world-leader, it will also create significant economic and employment opportunities here at home with about \$8 billion of the \$22 billion investment to be injected directly into Australia. It’s a strong statement to all Australians that despite the immediate challenges of the COVID-19 pandemic we will come out the other side stronger and industry is still investing in opportunities that will drive our economic recovery and create much-needed jobs.”

I do not believe that either Minister uttered the attributed statements. Both statements were likely written in the Prime Minister’s office and rubber-stamped by each Ministers’ officials. Nobody in any ministerial office bothered to check any of the invented and unsubstantiated propaganda that induced some negligent individual or group to bestow major project status on this scam. The time is right for these two Ministers to join other wise colleagues in making these points to the Prime Minister:

1. Australia should never have had a Minister for Emissions Reduction. That portfolio must be abolished forthwith.
2. Major-project status must immediately be withdrawn from a project which is so replete with fakery that it must be described as a scam.
3. All subsidies to unreliable and economically-destructive “renewable” energy must cease immediately.
4. Australia must withdraw from the Paris climate accords.
5. The Australian Renewable Energy Agency and all suchlike bodies must be abolished.
6. The Snowy Hydro pumped hydro plan must be abandoned.
7. The Australian Energy Market Operator must be relieved of all responsibility for transition of energy sources away from coal.
8. There is no role for the United Nations in the lives of Australians.
9. WHO is exposed as a Communist organisation attacking Australia’s energy. Leave WHO.

Major-project status was wrongly granted for a doomed project with a claimed capital cost of \$22bn. However, the true cost of the project is more like A\$76 billion with only 10 hours' backup battery storage and A\$165 bn with the minimum feasible 60 hours' backup. Thus, the true cost exceeds the propaganda cost of \$22bn by 250% and 650% respectively, for a project that would not work reliably even if it could be afforded. End the scam now.

Two factors add irony to the financial impossibility of this scam. First, there is no reason to believe that Indonesia will ever permit the laying of the cable through the Archipelago, and even less reason to believe that the Australian Foreign Minister has bothered to ask permission, before the granting of major-project status. This is a diplomatic disgrace.

A further point worth noting is that the cable is strategically indefensible. Why would Singapore want 20% of its electrical energy helplessly vulnerable to the simplest sabotage?

The Economic Times [article](#)⁴⁰ quoted above also reveals that the COVID-19 pandemic is being used as an excuse to promote the fortunes of interests hostile to reliable energy under the guise of assisting recovery. The article reads:

MELBOURNE: Australia decided this week to fast track approvals for a A\$22 billion (US\$16 billion) project to supply solar power to Singapore via the world's longest subsea high voltage cable, a move to boost recovery from the coronavirus crisis.

The Northern Territory Government at its Major Projects [website](#)⁴¹ lists: ***Project Sash - Sun Cable Pty Limited.***

There is no excuse for the Federal Government to follow the bad example of the Northern Territory Government. Major Project Status has been granted, but not on the merits of the project, which has no merit.

Australians deserve to know the real reason for this unsupportable decision. Possibilities include:

- The mentality at all levels of government that any plan to undermine reliable energy, however irrational, must be automatically supported and encouraged.
- COVID-19 has increased the opportunities for recklessly irrational destructive behaviour by governments, and our rulers are determined not to miss this opportunity.
- Wealthy and influential friends of the Government stand to profit immensely.
- Decisions which should be made by the elected representatives of the Australian people are being made by entities hostile to Australia.

Governments parrot statements such as ***“Extraordinary times call for extraordinary measures”***. This is a false concept. Extraordinary times require maximum caution in all decision-making, which must be based upon historical precedents for wise judgment in the face of danger or disaster, careful analysis of the consequences of all decisions, and, above all, thorough, audited and transparent costing. Yet the present project has not been costed to any recognizable standard. Shareholders in Sun Cable, beware!

Dangerous recklessness is common among political leaders who have never been trained by the market-place to suffer the impacts of their own errors of judgement. Now inflicted upon Australia is the concept: ***“Something must be done! This is something. Let's do it!”***. The truth is that nothing need be done. The Sun Cable project is worse than nothing. The capital cost of the intermittent, eco-unfriendly power it might generate would exceed that of proper, honest coal-fired power by an order of magnitude. ***Let's NOT do it.***

Indicative of the danger embedded in the politics of subsidy, here is an extract from the online publication SolarInfo⁴²:

Power companies are fighting an uphill battle they are sure to lose and they're blaming customers who are taking advantage of massive government savings programs⁴³. Specifically, they are blaming State Rebates that incentivize homeowners to use clean energy by reducing solar power projects to \$0 down installations.

Reckless subsidy policies have led to concepts which can lead only to grief. The grief will be felt in varying degrees by investors and by local Aboriginal communities whose hopes have unreasonably been raised. Exempt from feelings of grief will be the politicians who have squandered public funds for their own advancement.

As an example, on 8 October 2019 Hydrogen Renewables Australia announced the Murchison Renewable Hydrogen [Project](#)⁴⁴, a combined solar and wind farm with the nameplate capacity of 5GW intended to produce low cost renewable hydrogen or “green hydrogen”. This doomed project is enthusiastically promoted by Siemens AG which expects to be a major recipient of a river of subsidies.

There is of course no such thing as low cost renewable hydrogen and “green hydrogen” is fictional. The contrary impression has been deliberately created by anti-carbon-dioxide careerists in the CSIRO who are responsible for generating this appalling propaganda [statement](#)⁴⁵:

An energy shift will manage Australia's transition to a reliable, affordable, low-emissions energy economy that builds on Australia's existing sources of comparative advantage.

- *Manage the transition to renewable sources of electricity, which will be driven by declining technology costs for generation, storage and grid support.*
- *Improve energy productivity using available technologies to reduce household and industrial energy use.*
- *Develop new low-emissions energy exports, such as hydrogen and high-voltage direct current power.*

As if to reinforce the evidence that political propagandists masquerading as scientists at the CSIRO have too much time on their hands and enjoy access to too much taxpayers' money for producing valueless reports, here is repetitive rubbish from the same publication.

Three levers that support affordable, reliable, low-emission energy include:

- *Transition to low-emissions electricity: investment in an affordable, reliable, low-emission electricity system delivers more electricity with almost no greenhouse gas emissions for industrial, transport and domestic needs.*
- *Improve energy productivity: businesses and households can use readily available technologies to get more value from each unit of energy, or switch to using lower-cost, low-emission electricity.*
- *Develop new energy exports: as risks emerge for traditional energy exports, Australia can start to export hydrogen, as well as electricity via high-voltage direct current (HVDC) power, offsetting declining fossil fuel export revenue and supporting the abatement efforts of nations with limited renewable resources.*

The burgeoning hydrogen scam deserves a separate article, but here are some brief observations from my spreadsheet files:

- The application of 39 kWh (140.4 MJ) of electricity to 9 litres of water will produce by electrolysis 1kg of hydrogen. 50 kWh (180 MJ) of electricity will deliver that 1kg of hydrogen in compressed form.

- A kilogram of hydrogen stores 120MJ of energy, so in compressed form one third of the energy input of 180 MJ has already been lost.
- On my 2018 calculations, the cost of 100MJ of energy stored in a range of fuels was:

Hydrogen generated by electricity from solar energy	A\$9.17
Hydrogen generated by electricity purchased from the grid	A\$5.42
Untaxed petrol	A\$1.13
Untaxed diesel	A\$1.84
Bituminous coal	A\$0.34

The ABC is always keen to maximise any opportunity to promote alternatives to reliable inexpensive energy, and on 8 August 2018 published an interview⁴⁶ with Dr Michael Dolan, BAppSc, MBA, PhD, then CSIRO Principal Research Scientist. Dr Nolan was promoting the operation of motor vehicles using hydrogen produced from ammonia using a membrane technology developed by the CSIRO (at taxpayers' expense). Dr Nolan was quoted:

The membrane breakthrough will allow hydrogen to be safely transported and used as a mass production energy source. We are certainly the first to demonstrate the production of very clean hydrogen from ammonia. Today is the very first time in the world that hydrogen cars have been fuelled with a fuel derived from ammonia — carbon-free fuel.

Dr Nolan said that the cost of the hydrogen fuel would be around A\$15 per kilogram, which translates to A\$12.50 for the cost of 100MJ of stored energy. That is 36% higher than my calculation (above) of \$9.17 for the cost of 100MJ stored in hydrogen from solar energy, and 1,000% higher than my calculation of the cost of 100MJ of energy stored in petrol. In January 2019 Dr Nolan left the CSIRO for Fortescue Metals Group and was [appointed](#)⁴⁷ Manager Hydrogen for FMG in January 2020.

In coming weeks there will be a proliferation of malign attempts by Governments and profiteers worldwide to squeeze out of the COVID-19 pandemic every excuse to promote hostility to reliable energy. Here is an extract from a 6 August 2020 [article](#)⁴⁸ in Renew Economy:

West Australia looks to establish local wind turbine manufacturing industry

Western Australia's MacGowan Labor government has launched a study into the feasibility of producing wind turbine components locally – a move that would mark a first for the state and a rarity for Australia as a whole. The initiative, part of the government's \$92.4 million package to boost local manufacturing and bolster employment, will look at supply opportunities for wind farms, market trends, and local industry participation opportunities including for component manufacturing. The study brief also includes investigating opportunities to create jobs in both metropolitan and regional areas, as well as the potential to generate investment.

The initiative comes as two new wind farms Warradarge and Yandin – are nearing completion that will double the state's wind output, and as major international players such as BP, Siemens, and a group comprising Vestas, Macquarie and CWP look at a range of potential multi-gigawatt scale wind and solar arrays that could deliver energy exports, green hydrogen, or a green metals and manufacturing industry.

State energy minister Bill Johnston said the study, led by the Department of Jobs, Tourism, Science and Innovation, would delve into the feasibility of how to increase local manufacturing to help in evolving industries like the renewable energy sector.

Note in the second paragraph the threat to implement the proposed Pilbara-to-Vietnam extension cord [project](#)⁴⁹, an ugly sister to the scam discussed here. What has happened to human thought processes when a government can discuss “a green metals and manufacturing industry”? This has been tried

before. It was called the Stone Age. We are right to be alarmed at the enthusiasm of major companies to profit from activities which are so easily demonstrable as contrary to the national interest and especially hostile to the poor and disadvantaged.

In conclusion, below are compelling extracts from articles by two noble gentlemen, each tireless in the defence of civilisation against the relentless enemies of reliable energy.



The Viscount Brenchley (UK)
indefatigable international [campaigner](#)⁵⁰



Viv Forbes of Queensland, Australia
inspirational founder of the [Saltbush Club](#)⁵¹

Reporting the fraudulent practices behind global warming science

WUWT **Guest Blogger** / June 3, 2019

by *Christopher Monckton of Brenchley*

The prison gate is about to slam thunderously shut on the global warming fraudsters. It is time to report their profitable but murderous deception to the public investigating and prosecuting authorities.

To prove a fraud, though, is harder than to prove a murder. One has to demonstrate – beyond reasonable doubt – not one but two criminal intents.

The first is the intent to deceive by way of a false and dishonest representation. A representation is false if it is untrue or misleading and the person making it knows that it is, or may be, untrue or misleading. A representation is dishonest if what was done would be regarded as dishonest by the reasonable man on the Clapham omnibus, and if the perpetrator must have realized that the reasonable man would regard the deception as dishonest.

The second is the intent to cause a gain or loss in money or money's worth by means of the deception – an intent either to gain by fraudulently getting what one does not have or by fraudulently keeping what one already has, or both, or an intent to cause a loss by depriving the victims of what they already possess, or by preventing them from gaining what they would otherwise have gotten, or both.

The war on carbon fuels

Viv Forbes, July 2020

The political war on carbon fuels has damaged the environment with forests of 'green' power poles, flats of ground-sterilizing solar panels, hills of bird-slicing wind turbines plus spider-webs of new power lines and roads. This mess produces unreliable, expensive electricity, sterilizes land, and wastes water to keep solar panels clean. And imagine the debris when a cyclone sails through a farm of panels or a forest of turbines. This expensive and unreliable power, plus 'green' taxes and regulations, has destroyed much of Australia's manufacturing, processing and refining industries – all for zero climate benefits. Gladstone aluminium refinery, with 1,000 direct employees, is a potential victim.

Abandon the climate war on carbon fuels and withdraw from the useless and destructive Paris Climate Agreement. It will never cool the climate, even if that was a sensible goal.

Abolish all subsidies and taxes supporting intermittent green energy and legislate that any generator feeding into the grid must be able to supply 24/7 power, either from their own backup facilities or under contracts.

Economic recovery needs to encourage and fast-track sensible infrastructure and development proposals. We should also abolish stamp duty and capital gains tax and reduce income tax. Governments should prohibit real pollution of land, air and water, but allow farmers, fishermen, foresters, explorers, miners and entrepreneurs to get on with building and expanding their businesses.

Spread the pain of recession to all protected government sectors. Cut taxes, and reduce the numbers and benefits for all in politics, bureaucracy, government media, academia and all able-bodied welfare recipients with no dependents.”

Amen to all that.

Postscript: Here are scientists and their well-informed allies whose work confirms that there is no excuse for governments to steal from taxpayers and electricity consumers to bestow undeserved subsidies upon unreliable energy and its profiteers. Please send additions to the list to michael@michaeldarby.net.

David Archibald, BSc(Geol.)

Dr Ed Berry, PhD, CCM

Senator Matt Canavan

Tshung Chang, BSc

James Delingpole, Brietbart

Myron Ebell, Cooler Heads Coalition

Dr David Evans, PhD

Dr Christine Finlay, PhD

Viv Forbes

Leo Goldstein MSc

Chris Horner, Energy and Environment Legal Institute

US Senator James Inhofe

Dr Dennis Jensen, PhD

Craig Kelly MP

Hon Mark Latham MLC

Bjørn Lomborg, Copenhagen Consensus Centre

Dr Jennifer Marohasy

Patrick Michaels, Cato Institute

The Viscount Brenchley, Lord Christopher Monckton

Marc Morano of ClimateDepot.com

Joanne Nova BSc, GradCert Scientific Communication

Prof. Ian Plimer, BSc(Hons), PhD, FAATSE, FGSL, MGSA, MRSSA, MRSNSW

Dr John J Ray, PhD

Senator Malcolm Roberts

Viscount Matthew White Ridley, House of Lords

Senator Malcolm Roberts

Fred Singer, Science & Environmental Policy Project

Hon Charles Smith, BSc(Hons) MLC

Roy W. Spencer, University of Alabama

Stephen Wells, Author, Confessions of a Climate Change Denier

Graeme Wishart

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- ¹ <https://www.business.gov.au/Expertise-and-Advice/Major-Projects-Facilitation-Agency>
 - ² <https://www.business.gov.au/Grants-and-Programs/Major-Project-Status>
 - ³ <https://www.pv-tech.org/news/australia-grants-major-status-to-au22bn-solar-storage-and-transmission-proj>
 - ⁴ <https://www.worldatlas.com/articles/what-are-the-biggest-industries-in-singapore.html>
 - ⁵ https://en.wikipedia.org/wiki/List_of_countries_by_electricity_consumption
 - ⁶ https://www.globalpetrolprices.com/Singapore/electricity_prices/
 - ⁷ <https://www.suncable.sg/>
 - ⁸ <https://en.wikipedia.org/wiki/Basslink>
 - ⁹ <https://www.in2013dollars.com/us/inflation/2005?amount=1>
 - ¹⁰ <https://electrical-engineering-portal.com/analysing-the-costs-of-high-voltage-direct-current-hvdc-transmission>
 - ¹¹ <http://suncable.sg>
 - ¹² <https://www.gov.uk/government/news/greater-manchester-to-house-to-worlds-largest-liquid-air-battery>
 - ¹³ <http://www.solarmango.com/ask/2015/10/26/what-is-the-installation-cost-of-utility-scale-solar-power-plant-mw-in-the-uk/>
 - ¹⁴ <https://new.siemens.com/global/en/products/energy/high-voltage/transformers/hvdc-transformers.html>
 - ¹⁵ https://en.wikipedia.org/wiki/High-voltage_direct_current,
and see <https://en.wikipedia.org/wiki/Desertec>
 - ¹⁶ <https://www.power-technology.com/projects/pavagada-solar-park-karnataka/>
 - ¹⁷ <https://www.euractiv.com/section/trade-society/news/desertec-abandons-sahara-solar-power-export-dream/>
 - ¹⁸ <https://en.wikipedia.org/wiki/Desertec>
 - ¹⁹ <https://neutronbytes.com/2020/04/05/poland-counts-costs-for-new-nuclear-reactors/>
 - ²⁰ https://schlüssel-technical.com/docs/reports_35.pdf
 - ²¹ <https://constructionreviewonline.com/2019/07/us-80bn-grand-inga-dam-power-project-discussed-at-au-summit/>
 - ²² <https://www.voanews.com/africa/drc-faces-power-shortage-caused-drought>
 - ²³ <https://www.un.org/sg/en/content/profiles/elliott-harris>
 - ²⁴ <https://www.sbs.com.au/news/australia-must-place-climate-action-at-centre-of-coronavirus-recovery-chief-un-economist-says>
 - ²⁵ <https://dailycaller.com/2020/03/31/world-health-organization-budget-travel-spending-us-funding/>
 - ²⁶ <https://www.facebook.com/watch/?v=777693743065981>
 - ²⁷ <https://finance.yahoo.com/news/indonesias-2020-coal-exports-seen-113741562.html>
 - ²⁸ <https://www.worldometers.info/coal/indonesia-coal/>
 - ²⁹ <https://www.snowyhydro.com.au/snowy-20/about/>
 - ³⁰ https://en.wikipedia.org/wiki/Splityard_Creek_Dam
 - ³¹ https://en.wikipedia.org/wiki/Cruachan_Power_Station
 - ³² <https://www.statista.com/statistics/1031884/value-pound-sterling-since/>
 - ³³ https://en.wikipedia.org/wiki/Ivanpah_Solar_Power_Facility
 - ³⁴ <https://infrastructurepipeline.org/project/australia-asean-power-link/>
 - ³⁵ <https://theaseanpost.com/article/building-aseans-power-grid>
 - ³⁶ <https://www.sciencedirect.com/science/article/pii/S1364032116305573>
 - ³⁷ <https://www.minister.industry.gov.au/ministers/karenandrews/media-releases/22b-project-power-nt-singapore-given-major-status-boost>
 - ³⁸ <http://michaeldarby.net/GeoffSherringtonPowerPrice.jpg>
 - ³⁹ <https://energy.economictimes.indiatimes.com/news/renewable/australia-fast-tracks-16-billion-solar-power-export-project/77256841>
 - ⁴⁰ *ibid*
 - ⁴¹ <https://business.nt.gov.au/investment-and-major-projects/major-projects-in-the-northern-territory/about-major-projects>
 - ⁴² <http://localsolarinfo.biz/westernaustralia-wa-1?fbclid=IwAR37zOVDb9pftPWdfi8aT0T8ct06RehMZZT6FTwhiUdkR02bmy3CxRrb61s>
 - ⁴³ <http://localsolarinfo.biz/westernaustralia-wa-qualify-1>
 - ⁴⁴ <https://new.siemens.com/au/en/company/press-centre/2019/murchison-renewable-hydrogen-project.html>
 - ⁴⁵ file:///C:/Users/mrmic/Downloads/ANO2_MainReport-Accessible-text.html

⁴⁶ <https://www.abc.net.au/news/2018-08-08/hydrogen-fuel-breakthrough-csiro-game-changer-export-potential/10082514>

⁴⁷ <https://www.linkedin.com/in/michael-dolan-7317b274/?originalSubdomain=au>

⁴⁸ <https://reneweconomy.com.au/west-australia-looks-to-establish-local-wind-turbine-manufacturing-industry-45394/>

⁴⁹ <https://reneweconomy.com.au/pilbara-green-hydrogen-project-grows-to-15gw-wind-and-solar-97972/>

⁵⁰ https://www.azquotes.com/author/37474-Christopher_Monckton_3rd_Viscount_Monckton_of_Brenchley

⁵¹ <https://saltbushclub.com/>

For the hundreds of millions of people that have newly emerged from poverty in recent decades and are beginning to enjoy the fruits of economic growth and technological progress across Asia, Africa and Latin America – among the greatest achievements in human history – demanding that the global use of fossil fuels be curtailed would be unacceptable. Wishing for a premature end to the Age of Oil (and gas and coal) will do humanity irreparable harm. *Dr Tilak Doshi, Senior Research Fellow at the King Abdullah Petroleum Studies and Research Center in Riyadh, Saudi Arabia*