

GENI's Vision: a world in which all people have access to ecologically sustainable energy.

GENI's mission: Educate world leaders and the public about the critical viability of the interconnection of electric power networks between nations and continents, with an emphasis on tapping abundant renewable energy resources.

THE GENI INITIATIVE: RESPONSE TO THE INTERIM GARNAUT REPORT

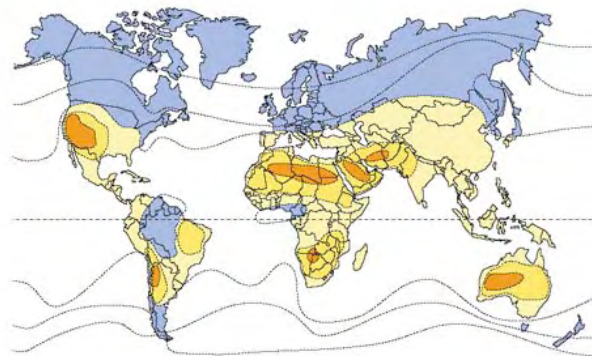
Three major themes stand out in the interim Garnaut report.

They are:

- 1. Climate change is a global problem**
- 2. Countries and regions need to start working on the problem *now***
- 3. Developed nations must show leadership.**

In our view, Australia's greatest contribution to a global warming solution will be to link the nation's electricity grid to Asia and export clean energy to the region for the benefit of all.

Should Australia think globally, act regionally and make a virtue of necessity, it can truly become a 21st Century 'energy superpower' by exporting its clean energy to Asia including, but not limited to, solar energy. Solar energy is the single energy resource Australia has *in greater relative measure* than ANY other nation in Asia. The theory of economic comparative advantage argues Australia should prioritize development of this resource.

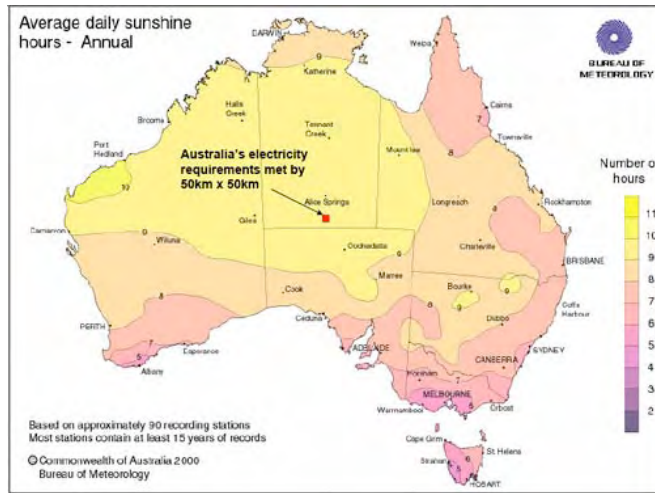


Suitability for solar thermal power plants:
 ■ Excellent ■ Good ■ Suitable ■ Unsuitable

Australia has huge, underdeveloped solar resources it could export to Asia
 Schott Solar

Wes Stein, manager of the CSIRO's Renewable Energy and the National Solar Energy Centre in Newcastle, New South Wales, tells us Australia's *entire* electricity requirements could be satisfied by a solar farm 50km on a side located in the sunny Outback, which also has huge potential reserves of geothermal energy and wind. Why

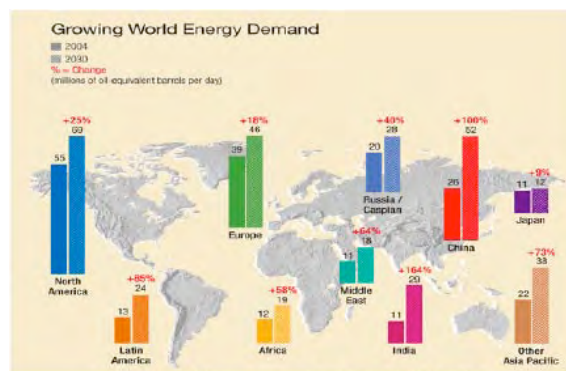
not develop these resources for the domestic market and regional export, weaning both Australia and Asia off fossil fuels and rendering contentious nuclear power potentially unnecessary?



A single solar farm in central Australia could power the nation, with room to spare for energy exports to Asia!
"Solar Thermal Status and Prospects," Wes Stein, CSIRO

How might it work? A huge, central Australian solar farm could feed electricity into Australia's eastern electricity grid. If the solar complex were built bigger, say 200km on a side (or a series of smaller complexes equaling that size), it could create electricity for export. Who might buy it? China, India and the countries of Southeast Asia, to name just a few.

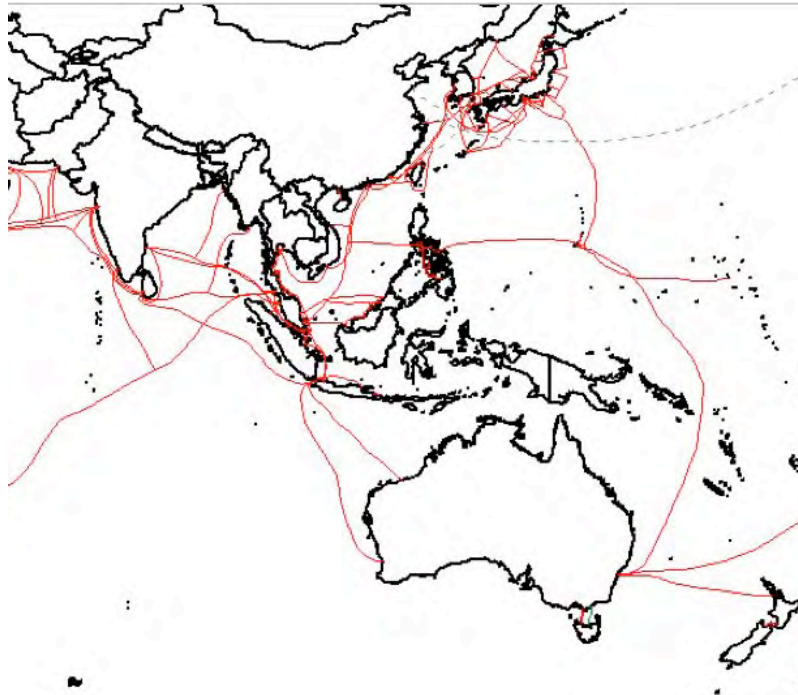
Between now and 2030, China's energy consumption is forecast to rise 100%, India's 164%, and the rest of the Asia Pacific by 73%. Given that the Asian region will account for the lion's share of increased global electricity demand in coming years, it's hardly an overstatement to say the battle against climate change will be won or lost in Asia.



The World energy outlook for 2030 by Region
Asia is where the global greenhouse battle will be won or lost
 International Energy Agency

Australia already has a strong reputation for being a reliable counterparty for export of coal, oil and natural gas. In a carbon constrained future, it should invest heavily in

production and exportation of 21st Century energy resources like solar by delivering its electricity to the power grids of Asia. This could be done by building initial delivery links in the form of subsea power cables. One such cable already exists in Australia in the form of Basslink linking Victoria and Tasmania. What's more, subsea cable infrastructure has a highly-successful precedent in telecommunications.

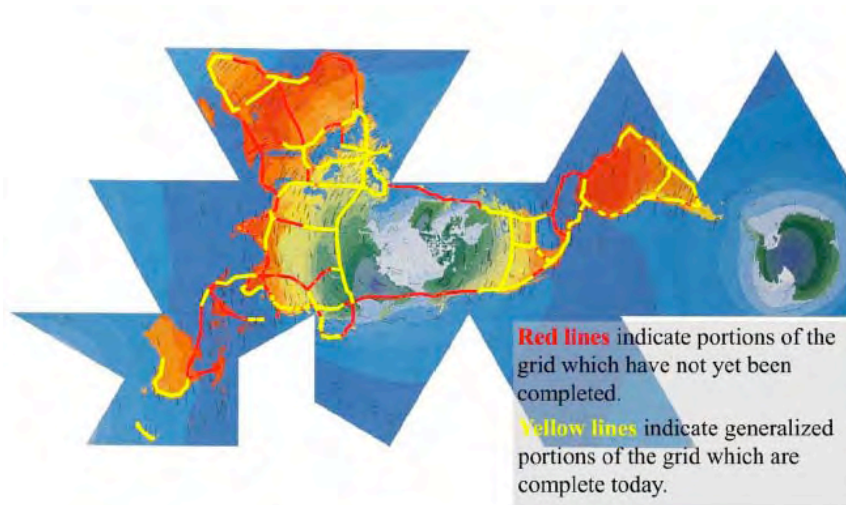


Telecommunications cable already crisscross Asia, providing a ready-made path for parallel electricity cables

Telegeography

Telecommunications cables now gird the world. They have generated virtually incalculable wealth and efficiency in the global economy. The GENI Initiative is based on the idea a similar global network for electricity will bring similarly huge, potentially ever greater, gains for humanity through creation of a whole new level of international political cooperation and multi-stakeholder economic growth. A global electricity infrastructure already more or less spans the globe. The task now is to interconnect it fully.

The graphic below on the left shows that only three major interconnects are now necessary to hook up the entire developed world. The first is Europe to North America, for which preliminaries are already. Iceland and the UK are in talks to transport export cheap, clean Icelandic geothermal power to the EU market. The second is connecting Russia's Far East to Alaska. However, this may take awhile given sparse populations on both sides of the Bering Strait. The third is Australia and Asia, where Australia has huge energy resources and Asia has huge populations and big energy needs. Connecting Australia to Asia would be a prime example of a global first mover. It would be hard to imagine a more demonstrative show of Australian commitment to the ideals of the Kyoto Protocol, which Australia recently signed.



The world already has a large part of a global electricity infrastructure in place; it's just a matter of filling the gaps

The GENI Initiative

One of these gaps is connecting Australia to Asia, particularly since Australia can be a major electricity exporter

The GENI Initiative

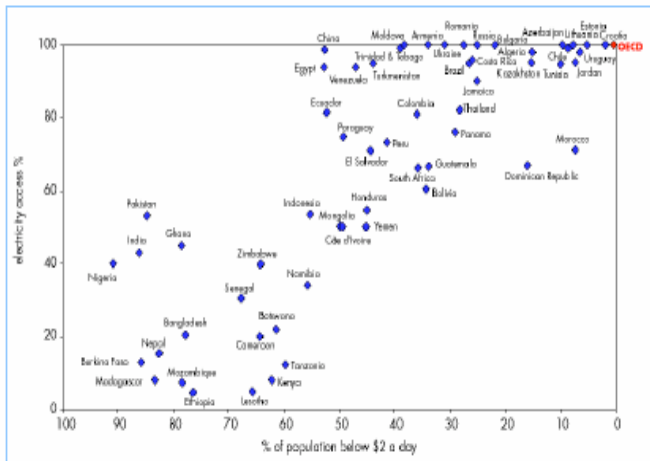
In its most extensive form, either Australia alone or Australia and its downstream electricity counterparties could invest in power cable connecting the Australian continent either to the existing Asian grid or through laying new cables directly to large customers (ie Singapore-Malaysia-Thailand, China or India). In all three cases, the solar energy sold would replace coal-fired power.

Given that Australia has agreed to sell China uranium, but no contracts have been signed, and given Australia's new labor government decision to refuse uranium sales to India, why not now do the economically rational thing by instead just moving on to selling these two countries higher value solar and renewable energy instead of exporting low-value, minimally-processed, increasingly politically-contentious uranium oxide and coal?

The cost of the cables above (the most expensive option) would cost something roughly \$20 billion. But bear in mind Iraq has already cost Australia roughly 10% of that. And if the cables, by exporting solar energy, could displace millions of tonnes of Asian regional coal-fired power carbon dioxide emissions, the global economic and environmental savings (comprehensively accounted) would produce a very rapid payback. On purely domestic considerations alone, Australia would benefit from selling a higher value commodity (electricity) than lower value commodities (coal and uranium). Australia also would gain international plaudits for its foresight and seriousness, as well as increase its geopolitical power as a major, reliable, fair-play provider of energy to the Asian region.

There would be other benefits as well. Economic researchers have found a strong correlation between economic development and electricity usage. Therefore, a national plan to expand clean energy exports to Asia lays the groundwork for a very virtuous circle indeed. That's because the richer a country gets, the more it cares about the environment.

Figure 13.5: The Link between Poverty and Electricity Access

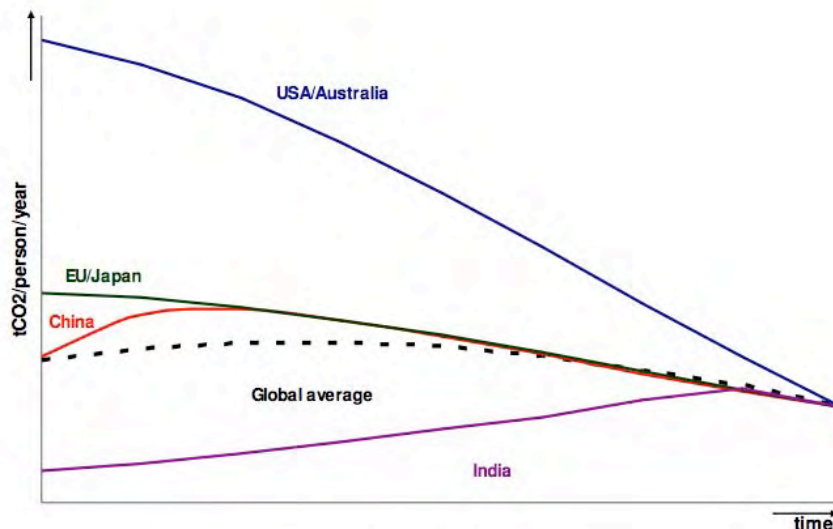


Note: Some transition economies and the OECD average are included for comparison purposes.
Source: IEA analysis using statistics from the World Bank's World Development Indicators, 2001.

A strong correlation exists between electricity usage and national development
OECD, IEA

The interim report suggests the greatest global per capita burden of downward adjustment in greenhouse gas emissions may fall on the US and Australia, even as per capita emissions rise in India and China. Clean energy exports from Australia to India and China will reduce the per capita greenhouse signature of three of the four countries. Everyone would come out ahead.

Figure 7: Contraction and convergence for different countries with headroom for the rapidly developing economies: a stylised, illustrative scenario



International emissions trading will help developing nations

Australia and the USA face big tasks in reducing per capital greenhouse emissions. Meanwhile, China and India's are expected to grow in coming years. Why not kill three birds with one stone?

Interim Garnaut Report

Naturally, there are those who will say connecting Australia to Asia with electricity cables to export clean energy is too costly. Our response: "business as usual" is also proving too costly, the baseline estimates of ignoring climate change all show that. Ignoring climate change is costly. Wars over energy are costly. Freakish storms and coastal flooding is costly.

Just as the Overland Telegraph connected Australia to the world in the late 1800s, and just as the Snowy Hydro scheme helped forged a post-World War II national identity, laying down the rudiments of a 21st Century regional Asian electricity grid would help move Australia closer to former prime minister Paul Keating's ideal of better relations and closer ties with Australia's geographic neighbors. It would also show Australia to be a caring participant in global affairs when it come to climate change.

A better role for an emerging 21st Century 'energy superpower' is hard to imagine.

We end our submission by noting a series of statements from the interim report that we at GENI believe support the points we have made above:

Without strong action by both developed and major developing countries alike between now and 2020, it will be impossible to avoid high risks of dangerous climate change.

Garnaut Climate Change Review, Interim Report (bold type added for emphasis)

How Australia fares in a world of climate change will depend above all on the extent of effective global mitigation, on how Australia manages its share of a global effort and on how the global and Australian economies and environments adapt to the impacts of climate change.

Garnaut Climate Change Review, Interim Report (bold type added for emphasis)

Australia can play an important international role by developing and applying exemplary national and regional mitigation arrangements. Australia can promote agreements with developing country neighbours which will reduce emissions and have an important demonstration effect by showing that developing countries can live within and indeed benefit from the adoption of national targets.

Garnaut Climate Change Review, Interim Report (bold type added for emphasis)

*Fourth, it would recognise that **there are external benefits from pioneering private investment in provision of network infrastructure related to electricity transmission**, natural gas pipelines and carbon dioxide pipelines associated with geo-sequestration. Here the potential for market failure derives from the external benefits conferred on others by the first mover in establishing what becomes new network infrastructure. The appropriate response may involve some combination of regulatory action and transitional financial support for investment.*

Garnaut Climate Change Review, Interim Report (bold type added for emphasis)

Developed countries need to show unilateral and regional leadership. Given the limitations inherent in any multilateral process of negotiations, accelerating progress will also require that countries act unilaterally and in regional groupings to accelerate progress, and increase the chance of a successful multilateral outcome.

Garnaut Climate Change Review, Interim Report (bold type added for emphasis)

The more and the sooner individual countries and groups of countries undertake

unilateral and regional efforts to mitigate climate change, the greater the prospects for a comprehensive and ambitious future global framework.
Garnaut Climate Change Review, Interim Report (bold type added for emphasis)

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