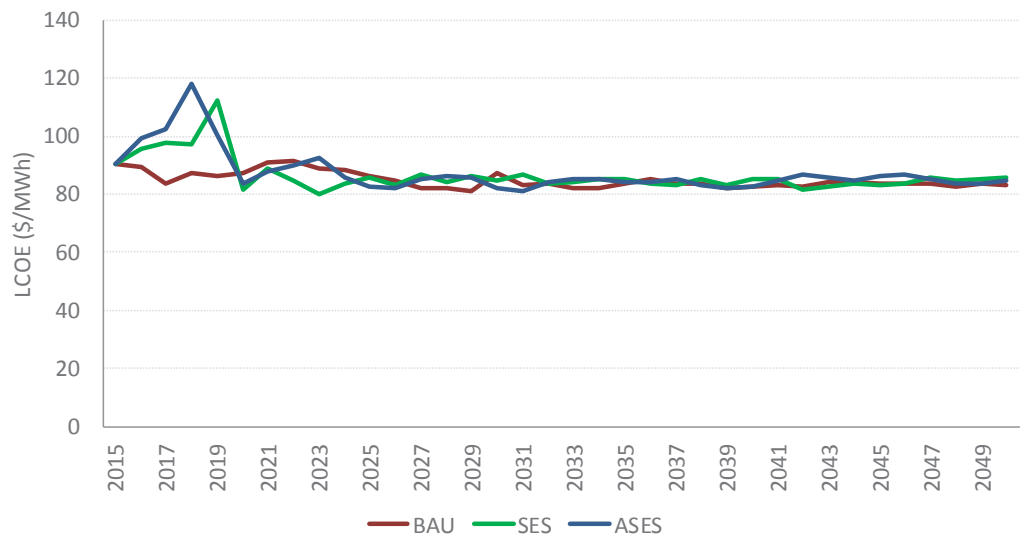


Figure 4. Levelized Cost of Energy for Three Scenarios



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Myanmar's power sector in numbers

49%

of installed capacity using solar energy (photovoltaic and concentrated solar) by 2050

0%


fossil fuel based generation starting 2043

20%

of installed capacity using wind energy by 2050

64,904MW

installed capacity using diverse renewable energy resources by 2050



Why we are here
To stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature.
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WWF AN ALTERNATIVE VISION FOR MYANMAR'S POWER SECTOR



BRIEF

MMR

2016

An alternative vision for Myanmar's power sector

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CLEAN ENERGY FOR MYANMAR

After decades of economic and political isolation, Myanmar is open for business. Encouraged by the smooth transition to democracy, investors are pouring in and the country stands poised for rapid development.

In the race to catch up with its neighbours, Myanmar finds itself in a tough balancing act. How will it procure the energy

it needs to sustain its development? Should it follow the path of many developed countries and burn fossil fuels, or import costly nuclear power stations? Or should it make use of its enormous potential for renewable resources?

Myanmar has a unique opportunity to avoid mistakes made by others and catch up with countries that have already forged ahead in harnessing renewable and sustainable energy. Rather than relying on heavily polluting high-carbon fossil fuel power generation, unsustainable hydropower projects or risky and costly nuclear power, Myanmar can leverage its rich endowment of renewable resources such as sun, wind, water, geothermal, biomass, and ocean energy.

By seizing these opportunities, Myanmar can take a giant leap into a better future for all its citizens.

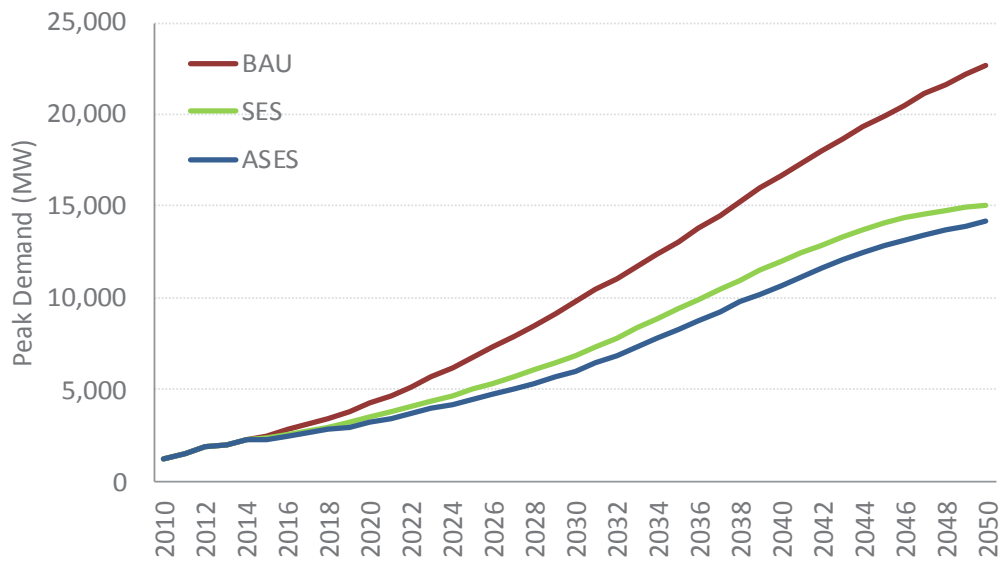
THE TIME TO ACT IS NOW

Only 32 per cent of Myanmar households have access to grid electricity, while the rest of the population either has no access or must rely on unreliable or badly maintained diesel micro-grids and small solar systems. The absence of standards or maintenance means that these sources are currently erratic. Most electricity is generated by hydropower resources and by burning fossil fuels.

The outgoing government has understandably sought to meet growing energy needs with low-cost investments. The Myanmar Energy Master Plan places great emphasis on deriving energy from coal-fired power plants and big dams, despite the long-term risks and massive environmental consequences associated with these methods.

But it is precisely because Myanmar has been left so far behind that it now has the chance to leapfrog the fossil fuel-based electricity era that started over 130 years ago and embrace the renewable energy era.

Figure 2 Peak Demand Projection from 2015 onwards of Business as Usual Scenario (BAU), Sustainable Energy Scenario (SES) and Advanced SES



There are several reasons to embrace renewable energy:

- Solar and wind technologies are the fastest solution for meeting the rapid growth in energy demand (Solar PV and wind projects could be built in months while fossil fuel, nuclear and hydropower projects would take several years.)
- Hydropower can have severe social and environmental impacts. It can destroy entire fisheries and the livelihoods that depend on them.
- A switch to renewables is necessary to mitigate climate change, the effects of which are already being felt in Myanmar, the world's second most vulnerable country to climate change.
- Fossil fuel plants are an uncertain investment and will only become more uncertain.

The study shows that a diverse mix of renewable sources can meet 100 per cent of Myanmar's electricity demand by 2050. The scenario presented by IES has at its core two principle energy tends: Rationalizing demand by improving energy efficiency and reducing wasteful use of energy, and maximize the use of electricity produced by renewables.

Figure 1. Solar (left) and wind (right) potential of Myanmar. (ref: IRENA)

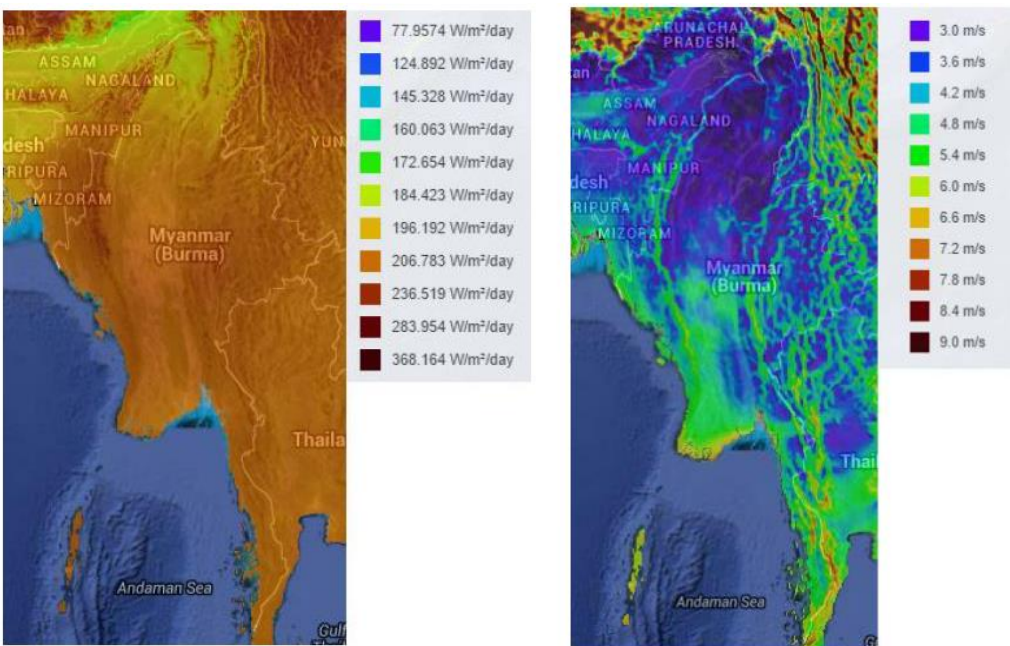
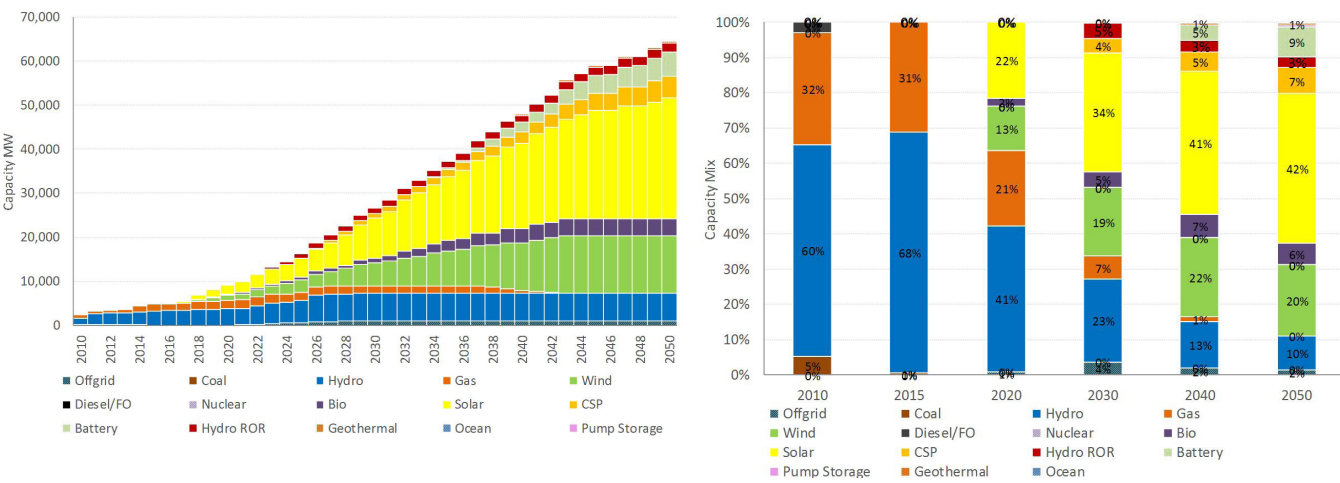


Figure 3. Capacity Mix Projection (MW and %) for Sustainable Energy Scenario



100% RENEWABLE ENERGY BY 2050

The alternative vision shows that it is technically and economically feasible to achieve 100 per cent renewable energy in Myanmar by 2050. Not only is it possible, but renewable energy makes economic sense: Prices are decreasing, especially photovoltaic(PV) and wind energy, energy derived from renewable sources has the potential to meet our electricity needs many times over, even allowing for fluctuations in supply and demand.

Renewable energy, properly exploited, can achieve a number of objectives: it can significantly reduce the nation's dependence on fossil fuels, accelerate universal access to electricity, ensure stable electricity prices for decades to come, increase job creation, strengthen cooperation with Myanmar's neighbours to optimise electricity consumption and production, and safeguard environmental services and benefits to society. The use of sustainable power can ensure electricity cost stability and maintain system security – that is, provide enough electricity at all times to make sure the lights don't go out.



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