We must urgently focus
on solar energy
Anand Mahindra

You won't win any prizes for guessing what the world's current preoccupation is: how to cope in a world where oil prices have risen dramatically One might think that India would be as obsessed as the rest of the world is with finding alternate energy solutions. Unfortu-nately, there isn't enough evidence of that. But why aren't we willing to grab this potential inflection point, and with our low-cost innova-tion skills tip the world into the widespread use of viable alternative energy sources? Let me focus on our approach to
solar power, as an example. The good news is that the issues of solar power
are definitely on the government's radar. While releasing the National Action
Plan on Energy recently, the prime
minister described solar power as having the potential to change the face of the nation. There is a goal to increase production of photovoltaics to 1,000 MW/
year and generate at least 1,000 MW of solar thermal power. This is a step in the right direction. But is this the best
that can be done?
Thinking small would be tragic,
given that the world's most abundant energy resource bestows itself gene-rously over most of our country Pundits
say that dedicating just 0.3 per cent of India's land area for solar power could meet our entire elec-tricity needs. Solar Thermal Electricity Genera-tion (STEG) is a simple technology that consists of curved mirrors that concentrate sunlight onto a receiver tube to heat a working fluid flowing through it. The remaining part of the plant is very similar to a conventional power plant. There are many reasons why STEG is surya's gift to us. STEG is one of the cleanest techno-logies available today A 50-MW plant would save around 90-120 million kg of greenhouse gas emissions. Secondly, its energy payback is merely five months compared to a useful life of more than 25 years. Most importantly, STEG technology is the only solar technology that provides "firm" power and allows plants to dispatch power when demanded. It can also work

in a hybrid mode enabling solar heat to be backed by co-firing with natural gas or coal. Waste heat from the combined generation of heat and power can be used for industrial applications, district heating and cooling and seawater desalination.
What then is the rub in implementing STEG
in a big way? First, it costs between Rs 7.50 and Rs 17 per kWh to generate electricity through STEG, compared to Rs 1.40 for certain coal-based plants. In India, however, many consumers make their own arrangements for back-up power. The installed capacity of captive power plants in India is more than 20,000 MW, approximately 40 per cent of which are based on diesel generator (DG) sets. The real cost of generation of diesel power, therefore, comes to around Rs 17/kWh if

we add the subsidy component. So while STEG may cost more compared to conventionally generated power, these costs are competitive with peak load power costs generated by DG sets. The cost of generation from a STEG plant
is also higher compared to, say, wind power. But here, scale will reduce costs. The US Department of Energy estimates that the cost of STEG power generation may come down to Rs 1.50-2.50/kWh in the next 15 years, which would be comparable to conventional power. Second, we give STEG only half-hearted policy support. Other countries, many of which receive half the sunlight we get, are taking the lead in successfully commercialising solar power technologies. Germany is becoming the largest PV market in the world. The US and Spain are hot spots in the global STEG market.

All this is due to policy and incentive support. However, India has a timid and incremental policy support. The MNES incentive scheme provides a maximum incentive of Rs 10 per kWh to STEG plants provided these plants are in the 1-5 MW range. This is a nice gesture, but it can hardly be said to open the floodgates for speedy development. STEG plants are cost-effective in more than 50 MW range — where the incentive doesn't apply. The policy incentive is also unavailable to plants that operate in the hybrid mode, with the back-up support of fossil fuels like natural gas. The policy kills entrepreneurial via-bility that can lead to quick commercialisation. We are not ambitious enough. The National Action Plan speaks of a quantum leap in the share of solar energy in the national energy mix. However, the plan has set a goal of installing 1,000 MW of STEG capacity
by 2017, as against India's need of 3,00,000 MW additional capacity Such a modest goal would not significantly
impact the energy mix in favour of solar
power and reduce the carbon footprint.
What could be an alternative
scenario? We plan around future imperatives and leapfrog to STEG. We leverage our skills of frugal innovation
to make it affordable and scalable, not just for India but the rest of the world.
We focus our policy support on scale
and commercialisation and attract public-private partnerships. We put
all plans on the fast track, and
become STEG technology leaders and suppliers to the world. And get ourselves plenty of clean energy in the bargain.
Let's not revert to our old pre-reform avatar, and wait for a beneficent western .power to find the solutions, and then go around with a begging bowl for 'technology transfers'. As we try to address global issues of climate change, energy security and snowballing oil prices, a commercially viable technology that is clean, scalable and utility-friendly is staring us in the face. We are endowed with abundant sunshine and a 1,70,000 sq km desert which is a natural energy generator waiting to be harnessed. What on earth are we waiting for? The time is ripe for a public-private partnership to help this technology — and India — attain its place under the sun.
The writer is an industrialist.

Harvest The Sun

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