Correspondence

India must now work on renewables

In a landmark announcement, India's government declared in April that all of the 597,464 villages recorded in the national census now have access to electricity. Its next step should be to ensure that this energy comes from sustainable sources (see H. Nagendra *Nature* **557**, 485–488; 2018).

The achievement is a significant advance in addressing global energy poverty: about 20% of the world's 1.1 billion people without access to electricity, and 30% of the 2.8 billion with no access to clean cooking energy, were in India (see go.nature.com/2iuftad). However, there is still some way to go. Up to 90% of villagers might still lack electricity, because a village is classified as electrified when 10% or more of its households are connected.

Another concern is the environment. India met 86% of its energy requirements from fossil sources in 2017–18 (64.8% from coal). More than one-quarter of the world's 6.5 million deaths due to air pollution in 2015 occurred in India.

More government investment in renewables is needed to ensure the long-term sustainability of India's electrical supply.

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EPA transparency: open to scrutiny

I share Naomi Oreskes' concern that the US Environmental Protection Agency's (EPA's) new transparency rule is a disingenuous effort to discredit scientific findings and that it could prevent solid evidence from shaping regulations (*Nature* **557**, 469; 2018). Other measures could boost transparency.

The EPA should improve the navigability of its website so that its decisions can be tracked and scrutinized. It should also restore its library system and create public reading rooms in all of its 36 offices. And its administrator should reinvigorate existing transparency policies, such as the 2008 Quality Policy and the 2012 Scientific Integrity Policy.

Government and academic scientists have collaborated to develop a weight-of-evidence process to evaluate the available models and data (see https://cfpub.epa.gov/si). The resulting 'criteria documents' are comprehensively referenced and include details of the assessment and review procedures, as well as the assumptions, reference values and analytical parameters used. The process meets the requirements of the Clean Air Act, Clean Water Act and other federal statutes that define the EPA's mission. They are consistent with the Administrative Procedure Act and have been validated through state and federal court cases. Given their proven long-term track record, I see little value in extra administration protocols to address the transparency of decision-making.

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EPA transparency: justification for rule

As president of the US National Association of Scholars, I take issue with Naomi Oreskes' concerns over the transparency rule proposed by US Environmental Protection Agency (EPA) administrator Scott Pruitt (*Nature* **557**, 469; 2018). In the association's view, the rule is a justified response to the irreproducibility crisis and reinforces the US government's long-standing commitment to base policy on the best available science.

In a public comment (see go.nature.com/2kugc81), the association recommends that the EPA should draft reproducible guidance to govern all of the administrative processes involved in regulatory science. This document would define "best available science" as research that uses only pre-registered protocols and that provides data — along with associated protocols, computer codes, recorded factual materials and statistical analyses — that are archived and publicly available for continuing independent verification. Our proposed document should rescind the EPA's 'weight-of-evidence' standard for justifying regulatory policy and replace it with a "best available reproducible science" standard that also complies with that definition.

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Local diagnostics kits for Africa

In our view, building local capacity in diagnostics could help Africa to tackle diseases such as malaria, HIV/AIDS and tuberculosis. We have set up a unit to design and develop diagnostic kits at the University of Ghana's West African Centre for Cell Biology of Infectious Pathogens (WACCBIP: http://www.waccbip.org).

A robust service to monitor public health and deliver treatment depends on reliable early diagnosis of medical conditions. Africa is generally very limited in its development and deployment of diagnostics systems, however, so these are mostly brought in at high cost from the developed world. Furthermore, the stability and usability of such sensing systems are hampered by poor storage conditions and inadequately trained personnel.

Using local platforms such as ours for developing diagnostic sensors and instrumentation will help to meet the continent's growing demand for them. The hope is that ill health will no longer impede the economic prospects of the continent.

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Ancient molecule's 200th anniversary

It is 200 years since Louis Jacques Thenard discovered hydrogen peroxide by reacting barium peroxide with strong acids (L. Thenard *Ann. Chim. Phys.* **9**, 314–317; 1818). Today, about 5 million tonnes of H_2O_2 is produced every year worldwide. Industry uses it as rocket fuel and a 'green' oxidant — for example, for treating wastewater and bleaching pulp and paper.

The molecule occurred in the oceans and in the atmosphere during prebiotic times, 4 billion years ago. At the time, there was no ozone layer and high-intensity ultraviolet irradiation generated the molecule through water radiolysis (J. Haqq-Misra *et al.* *Astrobiology* **11**, 293–302; 2011). Early life forms soon developed specialized enzymes to break the molecule down into water and oxygen.

In the past 50 years, H_2O_2 attracted attention in molecular biology, after it was identified as a component of normal cell metabolism. High concentrations contribute to the inflammatory response and low concentrations have a signalling function (see, for example, H. Sies *et al.* *Annu. Rev. Biochem.* **86**, 715–748; 2017).

This remarkable molecule fulfils the requirements for a biological messenger because it is relatively unreactive (W. H. Koppenol *et al.* *Free Radical Biol. Med.* **49**, 317–322; 2010). Its enzymatic production and degradation, along with its ability to oxidize highly reactive protein thiol groups, equip it admirably for molecular signalling.

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