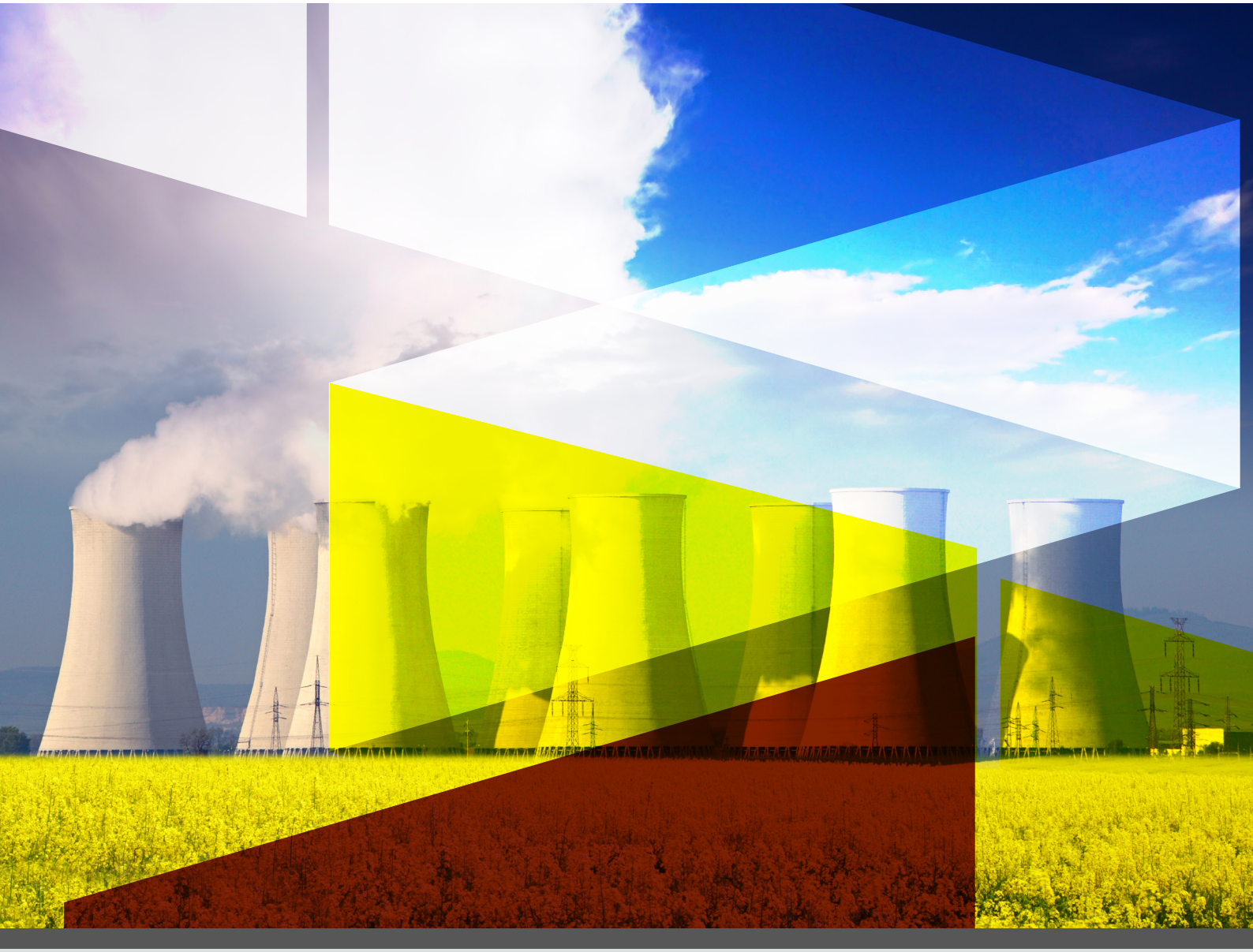
APU INSIGHTS
Product of APU Commercial Information Services LLC



Future Energy Scenarios

RESEARCH SPOTLIGHT

SMART PAPERS

Index

WATCH DIGITAL FUTURES VIDEO

DIGITAL FUTURES

DIGITAL FUTURES is an online content publication platform catering for technology business leaders, decision makers and users, by sourcing and sharing valuable information and best practices in connection to the latest emerging technologies trends and market developments that leverage capabilities and contribute towards enhanced enterprise-wide performance.

WATCH VIDEO

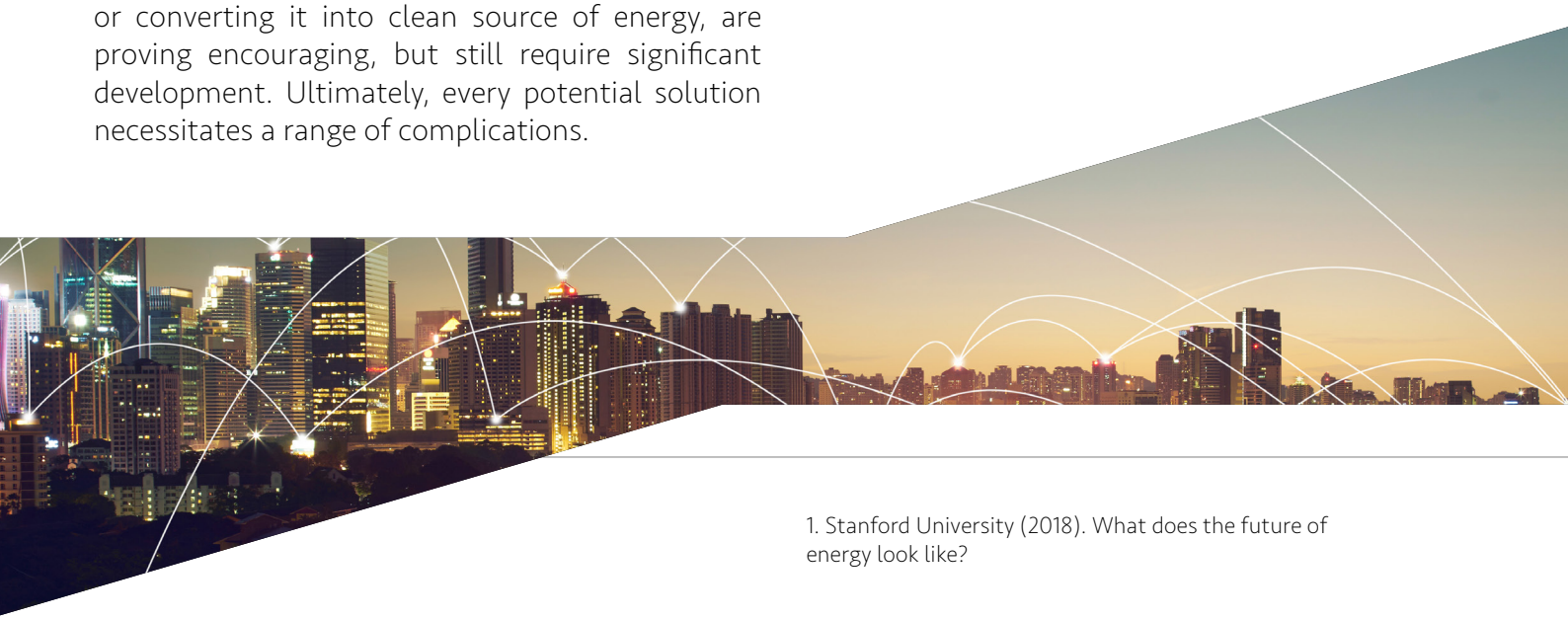
LEARN MORE

Introduction

80% of global energy for electricity purposes, heat and transportation consists of fossil fuels, such as coal, oil and gas. Such fuels also represent the main source of CO2 emissions on a global scale. According to a survey from Stanford University, curbing the use of fossil fuels would provide large-scale benefits for the environment and society at large; meeting international climate change objectives, improving health and environmental sustainability and helping reduce the scale, frequency and impact of natural disasters. Despite these clear benefits, industry players are still attempting to establish suitable alternative fuel sources.

Wind and sunlight provide powerful sources of sustainable and renewable energy, and have gained widespread value and recognition over recent decades. They do provide a number of logistical obstacles, however, hindering their industry-wide implementation. Moreover, the kind of batteries that can store the energy from such natural sources remain expensive to use and unable to store enough power to fill industry gaps. On the other hand, nuclear energy is emissions free, yet provides a number of other issues concerning the generation and maintenance of reactors. Other solutions, such as the underground storage of CO2 or converting it into clean source of energy, are proving encouraging, but still require significant development. Ultimately, every potential solution necessitates a range of complications.

Stanford scientists visualize a world that is less reliant on fossil fuels. Nobel physicist and former U.S. Secretary of Energy Steven Chu, a professor of physics and of cellular and molecular biology at Stanford, outlines a much broader challenge, "which cannot be overestimated," he says, namely, the development of a carbon-free world. While there are suggestions about better technologies, public policies and financial tools essential for an energy efficient world, it is a common belief that the ideal target would be a less carbon-reliant world, and that interconnecting solutions will create a more sustainable future.



1. Stanford University (2018). What does the future of energy look like?

> “Stanford experts agree “the world needs to be less reliant on fossil fuels for energy. Getting there will remake the world’s largest economic sector – energy – into one that is more sustainable, secure and affordable for everyone”

Section 1 | Key Energy Trends for 2020

Leveraging Emerging Technologies

Emerging technology drives developments in the renewable energy production and supply procedure.

The role of Blockchain
Blockchain is a key facilitator producing major improvements in energy supply, such as trading platforms and accurately tracking of distribution and consumption quantities.

Artificial Intelligence
Through automation of solar and wind functions, AI will reform the monitoring and storage of renewable energy to demonstrate their full possibility.

1.

Financing Sustainable Energy Designs

Green financing is growing rapidly. The massive demand to invest in renewable energy is boosting the market to discover new methods for financial aid.

Financing for Storage and PV Projects
Storage is an expensive and challenging issue for PV projects, which need to be made more bankable and able to provide smarter storage solutions to attract greater interest.

Large and Small-Scale Projects
Large energy projects are now easier to fund due to shifting economies of scale. Changes in finance have led to greater success rates of funding renewables in recent years which can be applied to numerous project sizes.

2.

The Smart City Drives Renewable Energy

The smart city model presents an urban environment, sustainable from economic and environmental point of view, that consists a suitable ground for renewable energy operations to be tried and implemented at scale. Cities can become net-zero energy and carbon neutral. Key aspects include micro-grids, increased energy efficiency in buildings and smart technologies.

3.

Changing Energy Mindset

Improving energy sustainability and decreasing demand by changing the mentality of energy consumers are the two principle parts of the energy equation. According to this, a wide variety of initiatives is needed, from public awareness to more visional energy producers. Governments should encourage the reduction of energy demand and ask;

"Where is the tipping point where this is no longer an issue of concern?"

4.

2. World Future Energy Summit (2019). 2020 Energy Forum explore the trends that are shaping the future of the industry.

Key Statistics

Beside the trends that affect the energy industry, a few other challenges are also evident. These can be underlined in statistics, affecting the industry as a whole. The most noticeable are:

1. Over 100 cities rely on clean energy for 70% of their energy needs.

2. 40 cities are 100% reliant on clean energy.

3. Solar grid parity is expected in 42 cities by 2020.

4. Cities account for 70% of energy-related CO2 emissions.

5. Crude oil production has increased by 16.5%.

6. 10% increase in U.S. gas consumption.

7. The electrical contribution in power consumption has increased to 72%.

8. CO2 fuel consumption in the U.S. has increased 3.1%.

9. China's energy consumption has grown 3.7%.

10. Oil consumption in Latin America has decreased 3.3%.

3. LinchPinseo (2019). Trends That Will Transform The Energy And Natural Resource Industry Outlook In 2020.


Renewable
Energy

SMART PAPERS

APU INSIGHTS
Product of APU Commercial Information Services LLC

RESEARCH SPOTLIGHT

FOLLOW OUR THINKING :

Designed and produced by APU Insights Creative Studio