*Originally published by Europe's World**, Spring Issue 2012", http://www.europesworld.org

Mankind is entering the third industrial revolution, says American futurologist ***Jeremy Rifkin****, and it heralds a future of more continental-scale political unions like the EU along with dramatic shifts in our economic patterns*

Industrial civilisation is at a crossroads. Oil and the other fossil fuels that make up our industrial way of life are sunsetting, and the technologies made from and propelled by these energies are becoming antiquated. The ageing industrial infrastructure based on fossil fuels is increasingly in disrepair. The result is that unemployment is rising to dangerous levels around the world, with governments, businesses and consumers awash in debt and living standards plummeting everywhere. A record one billion human beings – a seventh of the human race – face hunger if not starvation. Worse, climate change from fossil fuel-based industrial activity looms on the horizon. It is increasingly clear that we need a new economic narrative to take us into a more equitable and sustainable future.

Great economic revolutions occur when new communication technologies converge with new energy systems. New energy systems increase interdependent economic activity and expand commercial exchange. They also facilitate more dense and inclusive social relationships. New communication revolutions in turn become the means to manage the new dynamics arising from new energy systems.

In the 19th century, steam-powered print technology became the communication medium for managing the coal-fired rail infrastructure and the incipient national markets of the first industrial revolution. In the 20th century, electronic communications – the telephone, and later radio and television – became the communication medium to manage and market the oil-powered automobile age and the mass consumer culture of the second industrial revolution.

Today, internet technology and renewable energies are merging to create a powerful new infrastructure for a third industrial revolution. Hundreds of millions of people will produce green energy in their own homes, offices and factories and share it with each other through an “energy internet”, just as we now create and share information online. The democratisation of energy will bring with it a fundamental re-ordering of human relationships, impacting the way we conduct business, govern society, educate our children and engage in civic life.

The European Parliament endorsed this third industrial revolution in a formal declaration in May 2007. The third industrial revolution is now being implemented by the European Commission’s various agencies as well as in the EU’s member states.

Like every other communication and energy infrastructure, the various pillars of the third industrial revolution can only function in relation to one another, so they must all be laid down simultaneously, as otherwise the foundation will not hold. There are five pillars of the third industrial revolution:

The shift to renewable energy;

The transformation of the building stock of every continent into green micro-power plants to collect renewable energies on-site;

The deployment of hydrogen and other storage technologies in every building and throughout the infrastructure to store intermittent energies;

The use of internet technology to transform the power grid of every continent into an energy-sharing internet;

The transition of the transport fleet to electric plug-in and fuel cell vehicles that can buy and sell electricity on a smart, continental, interactive power grid.

The creation of a renewable energy regime, loaded by buildings, partially stored in the form of hydrogen, distributed via an energy internet, and connected to plug-in, zero emission transport, opens the door to the third industrial revolution. When these five pillars come together, they make up an interactive, integrated and seamless technological platform. The synergies between the pillars create a new economic paradigm that can transform the world.

To appreciate how far the third industrial revolution will transform the way we organise economic life, consider the profound changes in the past 20 years thanks to the internet revolution. The democratisation of information and communication has altered the nature of global commerce and social relations as significantly as did the print revolution. Imagine the impact that the democratisation of energy across all of society is likely to have when managed by internet technology.

Just as information likes to “run free” on the internet, distributed renewable energy will want to run uninhibitedly across national borders. When millions of people generate their own energy, sharing their energy from neighbourhood to neighbourhood and region to region, everyone becomes a node in a vast green electricity network. In the green-powered third industrial revolution, continents become the new playing field for economic life and continental-scale political unions like the EU become the new governing model. We are moving from “globalisation” to “continentalisation”.

The European Union is the first continental economy and political union to begin the transition to this third industrial revolution. Other unions have recently been formed in Asia with ASEAN, Africa with the African Union and South America with the Union of South American Nations. In North America, the fledgling political associations forged between the northern states and Canadian provinces seem the precursor to a possible continental union.

Local, regional and national governments will not disappear in the coming century; they will actually be strengthened as continental unions provide an expansive political framework for overseeing and regulating integrated continental markets.

Just as the internet connected the human race in a single distributed and collaborative virtual space, the third industrial revolution connects the human race in a parallel Pangean, or supercontinental, political space. What will this look like? The idea of a centralised world government might have been a logical fit for the second industrial revolution, but it is bizarrely out of place and out of sync in a world where the energy/communication infrastructure is nodal, interdependent and flat. Global networked communication, energy and commerce invariably gives rise to network governance at both the continental and global levels.

The continental era will transform international relations from geopolitics into biosphere politics. Our biosphere envelope is less than 40 miles deep, from ocean floor to outer space. The scientific community's recent insights into its workings amount to a rediscovery of the planet we inhabit. Researchers are beginning to think of the biosphere as analogous to a living organism whose various chemical flows and biological systems are continuously interacting with one another to allow life to flourish.

This change in how scientists view the earth is as profound in its implications as the change in thinking in the modern era, when scientists upended the Abrahamic description of the earth as a creation of God and replaced it with the notion that it was a remnant of the sun. The social Darwinist's view of nature as a battleground, where all creatures fight with each other to grab as much of the earth's resources as possible was taken up by nations and acted out on the grand stage of history in the form of geopolitics. Wars have been waged and political boundaries re-configured to secure access to fuels and resources.

The new scientific view, by contrast, sees the evolution of life and the evolution of the planet's geo-chemistry as a co-creative process in which each adapts to the other, assuring the continuation of life within the earth's biosphere envelope. Ecologists argue that it is the

synergistic and symbiotic relationships within and between species, as much as the competitive and aggressive drives, that help secure each organism's survival.

The shift from fossil fuels to distributed renewable energies will redefine international relations more along the lines of ecological thinking. Because the renewable energies of the third industrial revolution are ample, found everywhere and easily shared, but require collective stewardship of the earth's ecosystems, there is less likelihood of hostility over access. If the earth functions more like a living organism made up of layer upon layer of interdependent ecological relationships, then our survival depends on mutually safeguarding the well-being of the ecosystems of which we are all a part. This is the meaning of sustainable development, and the essence of biosphere politics.

We must therefore enlarge our vision and think as global citizens in a shared biosphere. Global human rights and health networks, disaster relief networks, germplasm storage, food banks, information and environmental networks, and species protection networks are a powerful sign of this historic shift from conventional geopolitics to fledgling biosphere politics. The third industrial revolution will propel the human race into uncharted territory. New energy relationships will require much wider governing jurisdictions. It is not inevitable, but it is at least highly likely that continental unions will become these new governing jurisdictions as geopolitics give way to emerging biosphere politics.

Jeremy Rifkin is the President of the Foundation on Economic Trends in Washington, D.C. and the author of The Third Industrial Revolution: How Lateral Power is Transforming Energy, the Economy, and the World

*

"*Europe's World* is the only independent Europe-wide policy journal, produced in association with over **150 leading think tanks and research institutes** from all over Europe and beyond.

Published every 4 months, *Europe's World* is NOT part of the specialist EU Brussels press. Unlike any other publication in the European policymaking arena,
Europe's World
has no national bias and a pan-European readership. Its purpose is to stimulate a Europe-wide **confrontation of ideas and policy proposals**
amongst leading stakeholders within civil society, business, government and the media on the challenges facing our continent.

A major advantage that *Europe's World* enjoys is its **readability**. Thanks to its tight editing *Europe's World*
is accessible to general readers as well as specialists making it more provocative and controversial than academic publications, and the
only Europe-wide ideas forum
to match the reach and authority of
Foreign Affairs.

Europe's World's website, **EuropesWorld.org**, is designed to further promote debate on the numerous issues confronting Europe. It spans articles and reactions to articles published in *Europe's World*
, but is not limited to the journal since it also
features studies and reports from think tanks throughout Europe and beyond
. Its aim is to give readers direct access to the latest in policy thinking across the EU, and
encourage visitors to submit their own reports and comment
on any of the contributions featured on the website."