

# **Beyond Austerity**

## **A Sustainable Third Industrial Revolution Economic Growth Plan For the European Union**

**(An Executive Summary of Jeremy Rifkin's Keynote Speech for the *Mission Growth Summit: Europe at the Lead of the New Industrial Revolution*, hosted by The European Commission, May 29<sup>th</sup> 2012)**

For months the international community has anguished over the future prospects of the European Union. The spreading credit crisis has raised the unthinkable question of whether the EU will survive in its current form. The European crisis is part of the larger global downturn affecting every nation. A mounting energy bill, the real time impacts of climate change on agriculture and infrastructure, the slowdown of the global economy, rising unemployment and escalating consumer and government debt have brought the world to the brink of a historic crisis of epic proportions.

Europe now finds itself caught-up in the maelstrom and is currently engaged in a fierce debate over how to save the Eurozone and, with it, the future of the European dream. Virtually everyone is in agreement that tough new austerity programs will have to be enacted in the member countries to reduce government debt, and new regulatory mechanisms put in place to oversee European financial institutions and markets. Any austerity programs however, have to be careful not to compromise the guiding values of the European Dream which include: the preservation of the social / market model; the commitment to sustainable economic growth; the advancement of quality of life for every citizen; and building a more just and peaceful world.

Still, there is a growing realization that austerity measures alone will be insufficient to assure the future of Europe and its member states. That's because this time around the challenges facing the European Union and the world go well beyond regulatory, fiscal, and monetary policies. The Second Industrial Revolution, powered by ever more expensive fossil fuels, and organized around an aging electricity grid and an outmoded transport network, all embedded in a crumbling carbon-based infrastructure, is incapable of spawning thousands of new businesses and millions of new jobs. It is becoming increasingly clear that what Europe needs, above all else, is a bold new economic narrative that can take it into a more equitable and sustainable future.

Today, Internet technology and renewable energies are beginning to merge in Europe to create the infrastructure for a Third Industrial Revolution (TIR) that can revitalize the European market, advance the next stage of European economic integration and help solidify the European Union as a political space. In the coming era, millions of Europeans will produce their own green energy in their homes, offices, and factories and share it with each other in a green electricity Internet, just like we now generate and share information online.

Ironically, while the European public is clamoring for a new economic vision that can move Europe into a period of sustained growth, the European Council and European Commission have been quietly developing just such a plan. The Commission's —Road Map for Moving to a Competitive Low Carbon Economy in 2050,¶ which will be reviewed by the member states during the Danish Presidency of the European Council, calls for the laying down of the five critical pillars that make up the Third Industrial Revolution infrastructure between now and 2050.

The five pillars of the Third Industrial Revolution are (1) shifting to renewable energy; (2) transforming the building stock of every continent into micro-power plants to collect renewable energies on-site; (3) deploying hydrogen and other storage technologies in every building and throughout the infrastructure to store intermittent energies; (4) using Internet technology to transform the power grid of every continent into an energy Internet that acts just like the Internet (when millions of buildings are generating a small amount of energy locally, on-site, they can sell surplus back to the grid and share electricity with their continental neighbors); and (5) transitioning the transport fleet to electric plug-in and fuel cell vehicles that can buy and sell electricity on a smart, interactive, continental 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 a Third Industrial Revolution. The entire system is interactive, integrated, and seamless. When these five pillars come together, they make up an indivisible technological platform—an emergent system whose properties and functions are qualitatively different from the sum of its parts. In other words, the synergies between the pillars create a new economic paradigm that can transform Europe and, in the process, create thousands of businesses and millions of jobs, making Europe the world's most competitive economy.

The 2050 road map notes that reaching the goal of a low carbon economy by 2050 will require major and sustained public and private investment of approximately 270 billion annually— or around 1.5 percent of EU GDP per annum— on top of the overall current investment of 19 percent of GDP in 2009. While the particulars of financing the transition to a Third Industrial Revolution infrastructure will require additional discussions in the months and years ahead, it is essential that the European Council, during the Danish Presidency, take the opportunity to publicly articulate the TIR vision for advancing the next stage of European integration.

Let me emphasize this last point. While all five pillars of the Third Industrial Revolution are put forward in the 2050 Road Map, they are siloed and never connected to tell the story of a new industrial infrastructure for a new economic era. What is needed now is for EU leaders to connect the dots and explain how the five pillars of the Third Industrial Revolution fit together to create a seamless new economic paradigm.

The transition to the Third Industrial Revolution will necessitate a wholesale reconfiguration of the economic infrastructure of the European Union, creating millions of jobs and countless new business opportunities. Nations will need to invest in renewable energy technology on a massive scale; convert millions of buildings into green micro-power plants; embed hydrogen and other storage technology throughout the infrastructure; lay down a green electricity Internet; and

transform the automobile from the internal combustion engine to electric plug-in and fuel cell cars.

The remaking of each nation's infrastructure and the retooling of industries is going to require a massive retraining of workers on a scale matching the vocational and professional training at the onset of the First and Second Industrial Revolutions. The new high tech workforce of the Third Industrial Revolution will need to be skilled in renewable energy technologies, green construction, IT and embedded computing, nanotechnology, sustainable chemistry, fuel-cell development, digital power grid management, hybrid electric and hydrogen-powered transport and hundreds of other technical fields.

Germany, the economic engine of Europe, is setting the pace in the transitioning of the continent into a Third Industrial Revolution. The country currently generates 20% of its electricity from renewable sources and is expected to produce 35% of its electricity from renewables by 2020. Equally impressive, more than one million buildings in Germany have already been converted into partial green micro power plants. Meanwhile, the German government is establishing hydrogen storage facilities across the country and testing the green electricity internet—the smart grid—in six geographic regions. Daimler, the company that invented the internal combustion engine that ushered in the Second Industrial Revolution, is readying hydrogen fuel stations in preparation for the mass production of its fuel cell automobiles in 2015.

For a younger generation of Europeans that has grown up on the Internet and is used to creating their own information and sharing it with millions of others in social commons in virtual space, the idea of generating their own energy and sharing it on a green electricity Internet across Europe is being enthusiastically embraced. When every European family, neighborhood, and business becomes a critical node in a distributed and collaborative energy network that encompasses the EU, the citizenry comes to feel vitally connected in the economic and political life of Europe.

The opportunity is clear. The European Union has 500 million consumers and an additional 500 million potential consumers in its partnership regions, giving it the prospect of becoming the largest and wealthiest internal commercial market in the world. The key is creating a seamless distributed renewable energy régime, a green electricity Internet, and a communication and transport network that will allow one billion people to engage in —sustainable commerce and trade across the European continent and its periphery. To the extent that the European Union can effectively create a post-carbon Europe and transform the continent into the largest integrated market space in the world, it will prosper, and the European Union will come of age.

The problem, at this juncture in the EU journey, is that much of the new economic vision and development plan that has been painstakingly developed is obscured in arcane technical reports that fail to grab the imagination of the European citizenry and the international investment community. Thus, for the most part, the European public is virtually unaware of the years of work that have gone into shaping the next stage of European economic integration. If the EU is to accomplish the formidable challenge of transitioning its infrastructure into a sustainable Third Industrial Revolution economy, it will need to make the case in a very public way— especially for the younger generation. In short, EU leaders need to frame the overall narrative that puts all

of the programs and initiatives together into a Third Industrial Revolution growth plan for the next stage of European integration.

Over the past several months, I have met with President Barroso, Chancellor Merkel, Industry Minister Antonio Tajani, and Danish Prime Minister Helle Thorning-Schmidt, among others, and all have expressed a passionate interest in leading the EU and the world into the TIR era. The 2050 Road Map lays out the technical details of transitioning into a TIR infrastructure and requires no additional preparatory work by the European Commission and European Council. What is needed now is a clear and compelling presentation of the Third Industrial Revolution vision to rally public support across Europe.

**About the author**

**Jeremy Rifkin** is the author of *The New York Times* best seller, *The Third Industrial Revolution, How Lateral Power is Transforming Energy, the Economy, and the World*. Mr. Rifkin is an adviser to the European Union and to heads of state around the world. He is a senior lecturer at the Wharton School's Executive Education Program at the University of Pennsylvania and the president of the Foundation on Economic Trends in Washington, D.C.