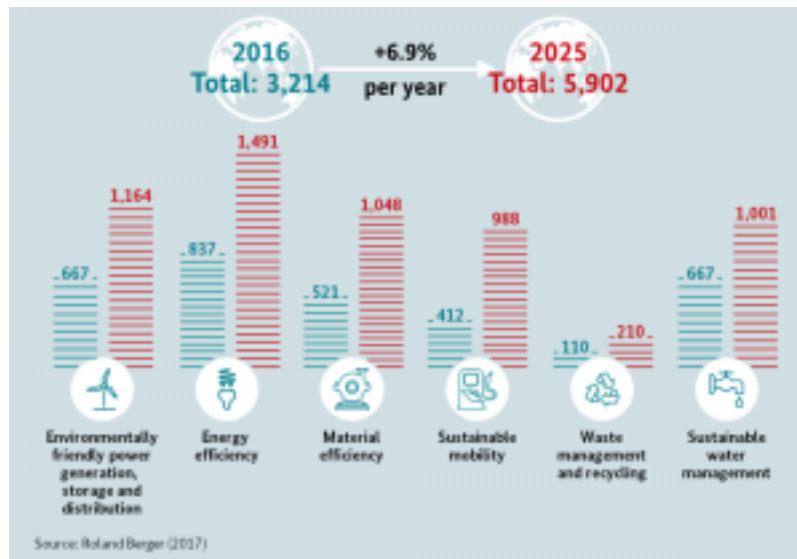
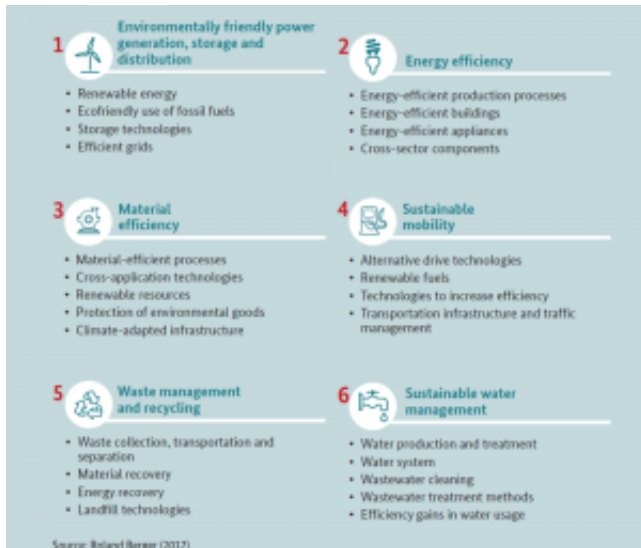


The Great Transition

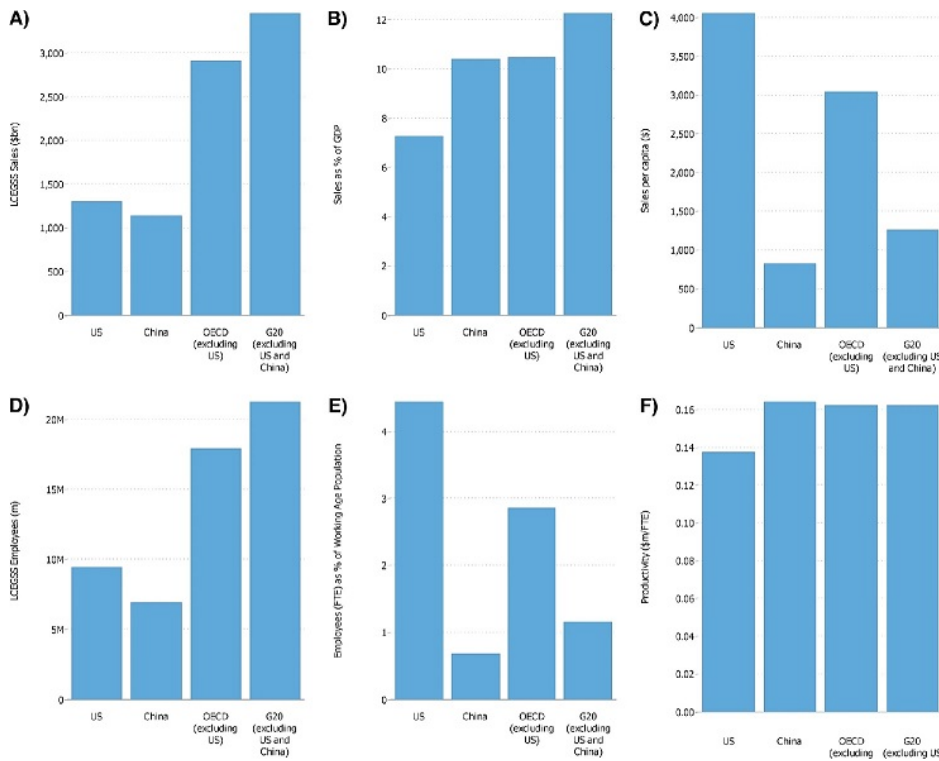


[*The Great Transition*](#) is the title of the preeminent sustainability theorist and activist Lester Brown's last book. The Energiewende - [energy transition](#) - is what the Germans call their brilliant initiative to reshape the energy economy. Call it a transition, revolution, [mobilization or transformation](#), or what you will. Call it clean tech, green tech, the green economy, sustainable development, or even the Low Carbon and Environmental Goods and Services Sector (LCEGSS). Whatever you want to call it and however you slice it, we are in the midst of a series of remarkable breakthroughs. A new paper in Palgrave Communications, "[Estimating the scale of the US green economy within the global context](#)," contains an eye-catching phrase in its abstract: "...the US green economy is estimated to represent \$1.3 trillion in annual sales revenue and to employ nearly 9.5 million workers; both of which have grown by over 20% between 2012/13 and 2015/16." The new paper evoked a report I've been using in my classes for a few years now from the German Environment ministry and the international consultancy, Roland Berger: [GreenTech Made in Germany](#). Their report, updated periodically, covers more than just Germany. It looks at six global "[lead markets for environmental technology and resource efficiency and their market segments](#)."



What the new paper accounts for is listed in their [taxonomy](#) which is pretty comprehensive, but is divided into three main sections: environmental goods and services (including everything from waste management to air and water pollution control to consulting services), "low carbon" (biofuels, CCS, carbon finance, nuclear power, etc.), and renewables. (The German report does not include nuclear power and that is a very big sector with a lot of money devoted to it. I, of course, have a dim view of [nuclear power](#) and do not consider it "low carbon" and certainly not clean tech.)

In any event, it's a big job, obviously, to calculate these sorts of numbers, a Herculean task in fact, and the authors of the new report are to be commended. Here is one of the revealing figures from the report comparing the numbers for the US with those for China, the OECD (excluding the US), and the G20 (excluding the US and China):



The implications are enormous for the politics of clean tech. As we continue to battle the desperate [malign forces of the fossil fuel industry](#), one of the most compelling arguments for renewables, distributed energy resources, energy efficiency, green building, EVs, and the like is how cost-effective these are, especially when you consider the many negative externalities, from air and water pollution to greenhouse gases to the resource curse. Another critical metric in all this is jobs. Charts D and E above give an indication of the many millions of jobs already available around the world. There is plenty of potential for more and that should be a convincing selling point as we advance our progress toward the newer world of global sustainability.

As one of the several superb research organizations working on renewables and other clean energy tech, REN21 in this case, has it in a recent article, there are any number of ways we should be [changing the thinking around renewables](#). It comes down to "telling a compelling story."