Aix-en-Provence, France—Understanding and shaping an ongoing technology revolution is one of our most important challenges. The fourth industrial revolution—4.0 as it is called—captures the convergence of new technologies and their increasing impact on contemporary societies. What is this revolution and why does it matter, especially for the Philippines? Let’s focus on energy 4.0, the opportunities it draws and the risks it brings.

The first industrial revolution emerged in 1760 with the transition from hand production methods to machine employment. The second came in the late 19th century, epitomized in the increased use of steam power in the railway and ships. The third began in the 1960s with mainframe computing and semiconductors. It can be argued that 4.0 started as technologies embedded in societal metabolisms, even in the human body. These technologies are developing with exponential speed, depth and breadth.

Robots manufacture cars with better precision than human-dependent assembly lines. Artificial intelligence produces medical diagnoses almost with pinpoint accuracy. Satellite imagery helps observe the extent of flooding and earthquake damages. 3D printing changes the manufacturing industry in many once-inconceivable ways. Energy systems also experience rapid change.

Energy 4.0 is not a propagandistic plan culled from the lexicon of bookworm revolutionaries. It may sound complex but it is a simple, yet important, idea. Here, smart energy production (replacing fossil fuels with renewable energy) and use (adopting more efficient