

1. **Read** the article “[Emissions Growth Slowdown – Can We Now Keep Global Warming Below 2 C?](#)” **Compare and contrast** the drivers of emissions growth in China, the US, the EU, and India with regard to the four terms in the Kaya Identity. In which of these countries is it likely that CO2 emissions have peaked?
2. **Read** the article “[Scientists made a detailed ‘roadmap’ for meeting the Paris climate goals. It’s eye-opening.](#)” **Explain** by how much fossil fuel emissions must **fall in each of the next three decades to meet the Paris climate targets**. **How** much of a role does the author see for biomass energy with carbon capture and sequestration (BECCS) in meeting the Paris targets? In your opinion, is reliance on rapid **worldwide deployment of BECCS feasible? Why or why not?**
3. What is meant by the “**duck curve**,” and how is this an example of the challenges of integrating renewables on the electrical grid?
4. **Read** the following short articles:
 - “[Solar Energy Has Plunged In Price – Where Does it Go From Here?](#)”
 - “[Are We Entering the Photovoltaic Energy Era](#)”
 - “[How Electric Utilities Could Revive Their Sagging Fortunes.](#)”

Write a brief essay (1 to 3 paragraphs) explaining

- (a) Whether it’s likely that solar power may soon provide 1/3 of the world’s electricity;
 - (b) why the dramatic cost reduction for solar power is very challenging for electric utilities, and
 - (c) why there is therefore a strong business case for electric vehicles and home heating.
5. **Read** the article “[Rapid, affordable energy transformation possible.](#)” Explain why intermittency of renewable energy currently requires large amounts of baseload and peaker power. Why is grid-scale battery storage proving difficult as a solution to this problem? What is the advantage of grid integration over a large geographic area? What is the role of high-voltage direct current transmission lines in the solution proposed by the authors of the new study?
 6. What is **Architecture 2030**? What is their “2030 Challenge?” Who do they expect to sign up to this challenge? Are they having any success?
 7. **Spend some time** with the [Yale Climate Opinion Maps](#) exploring the distribution of public opinion about climate change in the US. **What three things do you find most surprising** about these maps?

8. **Briefly define** the following climate policy instruments. State **when** each was enacted, and **what** each one did.
- a. UN Framework Convention on Climate Change (UNFCCC)
 - b. Kyoto Protocol of the UNFCCC
 - c. Copenhagen Accord of the UNFCCC
 - d. Paris Climate Agreement of the UNFCCC
 - e. Regional Greenhouse Gas Initiative (RGGI)
 - f. Clean Energy & Pollution Reduction Act (SB 350)
 - g. Fort Collins Climate Action Plan (FC-CAP)