Faculty across disciplines, from cross-cutting STEM fields, humanities, and social sciences, discuss a common topic or contemporary matter from the lens of their field. The conversation is open to all participants in the room, bringing the strength of the collective disciplines to bear on a wicked problem.

The environment is an issue that affects everyone, yet the messaging and politics that surround a more sustainable society and renewable energy are fraught with problems. A more robust understanding of these issues is needed to develop fresh approaches and policy solutions to address these problems as they arise.

**Experts**

- Greg Ballard
  - Fmr Mayor, INDY
- Maureen McCann
  - Purdue Energy Cntr
- Roshanak Nateghi
  - Industrial Eng.
- Leigh Raymond
  - Political Science
- Wallace Tyner
  - Agriculture
Conventional energies, such as oil and natural gas, pose economic, environmental, and societal problems that must be overcome in order to maintain a healthy, livable planet. Every year, scientists continue to warn of impending dangers from climate change creeping closer to reality, yet the "toxic" political climate around possible solutions stalls responsible policy aimed towards forward progress. The roles of government and the private sector in saving our planet remain undefined, but moving towards renewable, sustainable energy is possible.

**Going Green - The Next Disruptive Technology?**

In 1898, New York City planners and city officials, as well as concerned citizens, gathered in Manhattan to discuss the world of horses. Horse traffic throughout the city had become so prevalent and concentrated that some folks estimated manure could reach the 2nd or 3rd level of buildings in some areas without intervention. At this moment in time, horses and their manure seemed to be a critical problem with impending consequences. Ten years later, the Ford Model T began mass production, and horses and their mounting manure piles ceased to be relevant. The power of disruptive technologies, like the affordable automobile, should not be underestimated.

In today’s climate change environment, some scientists caution doomsday scenarios with catastrophic sea level rise and weather changes in the near future. While this is true on the current carbon emissions trajectory, others point to the beginnings of true disruption emerging from technology companies and industry.

The private sector is taking the lead from the government, notably as the US announced its intention of withdrawing from the Paris Climate Accord in 2017. Prior to that announcement being made, Twenty-five US companies such as Apple, Microsoft, and Google placed full-page advertisements in the New York Times to urge government officials to maintain its commitment to battling climate change. These same companies, along with most other major corporations in the US, pledged their individual compliance to the Paris Climate Accord, and have made enormous strides to seriously reduce the carbon footprint of their operations on a global scale.

Current sustainable technologies like electric vehicles, solar energy, and wind energy still struggle to gain full acceptance into society due to high initial startup costs to the average consumer. However, as industry is heavily invested in the initiative to go green, both economically and socially, it is feasible that huge advancements to make these technologies affordable and accessible will come within the next ten years. This kind of innovation may harness the power to change the course of our environment.
Energy & Society
The Moral Dilemma of Energy Consumption

Fossil fuel consumption is an indicator of social and economic success within a society. There is a linear correlation between a nation's Gross Domestic Product and its energy consumption; the more a country burns, the better off its citizens' quality of life. High energy consumption means more access to benefits such as cars, heating, health care, electric grid access, travel, internet, and air conditioning.

One billion people on the planet have no access to electricity, and nearly 2 billion have limited access (similar to what Americans had in 1925: 2 hours/day or less). Development of these populations to improve quality of life is essential and moral, but will undoubtedly have environmental consequences on the current fossil fuel energy sources.

While these countries develop and the global population booms, the demand for fossil fuels will far outstrip the supply. Fossil fuels are non-renewable; they are finite and will eventually be depleted, and the negative environmental impact will far outweigh any social progress that their consumption has facilitated. This limited supply also creates a security risk.

Renewable energy sources like wind, solar, geothermal, nuclear, and hydro-power are essential in combating climate change and maintaining development on a global scale, but also present major challenges. Accessibility is likely one of the biggest barriers to the growth of these markets; most power and energy infrastructure that exists today is set up to support traditional fossil fuel sources. Installing wind turbines, nuclear power plants, and solar panels on a large scale, and then developing the infrastructure to deliver this renewable energy to consumers is a large, expensive project that would likely take generations to complete, and this slow progress hinders adaptation. Additionally, while the price of renewables is dropping every year, the initial cost of installation of sustainable energy sources like solar panels is an enormous barrier to entry for average income families. In order for widespread adaptation, especially in developing countries, renewable energy sources must advance their accessibility and affordability.
Government, Society and our Energy Future: Who Does What?

The role of government in genuinely impacting climate change and providing sustainable energy sources for the average consumer is a quandary. Experts agree that instituting a carbon tax on not just corporations but everyday users of carbon-emitting technologies would likely curb usage and drive faster and more affordable development of renewable energy sources. However, this would have the potential to negatively impact the economy where the tax would likely be passed on to the consumer, causing a rise in prices on everything from vegetables to televisions. Because of this, most politicians refuse to even approach the topic of carbon taxes for fear of losing their next bid at re-election due to the fallout.

Instituting policy like a carbon tax would most likely include a painful adjustment period for the economy and society at large. This is not ideal. However, viable alternatives in the policy sphere are not readily available. Previously, the government has attempted to subsidize cleaner energy by giving tax breaks, but the market did not respond. Consumers have instead hinted at preferring government investments that make the energy itself cheaper, such as co-investing in wind farms with energy companies to lower the cost of such energy for the actual consumer or subsidizing hybrid vehicles upfront rather than as a tax incentive.

However improbable, it is possible that affordable and accessible innovation in renewable energy will be driven by complete non-leadership and refusal to engage at the state and federal level. This policy silence will allow industry to engage with the consumer demand for better energy sources, free of regulation.

Climate Change: Disasters & Energy Risks

The amount of billion-dollar disasters caused by climate change has increased drastically in the last 20 years. Because society is so reliant on fossil fuels, the loss of power from these events is catastrophic, and the energy needed to aid in the recovery of these natural disasters, such as hurricanes, droughts, heat waves, and wildfires is more and more every year. With no signs of society slowing down energy consumption, power companies are being forced to reevaluate the resilience of their networks, as fears of social unrest in the event of energy supply failure and recovery loom overhead.

This Contemporary Matters Discussion Summary is prepared by PPRI based upon what our panel of experts shared with the audience.