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ENERGY TECHNOLOGIES

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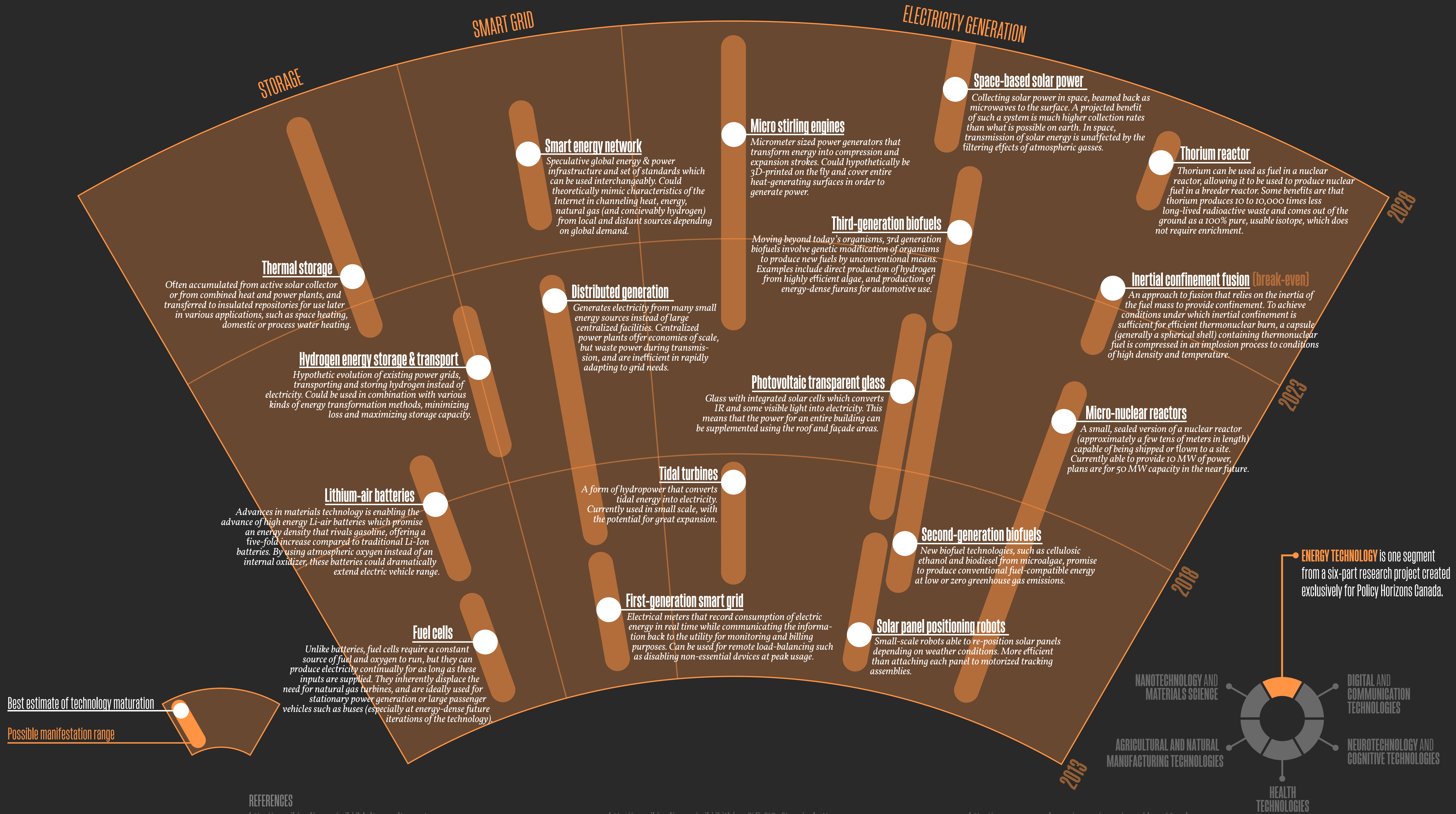
The near future of technology promises change at an ever-increasing pace while rapidly transforming business models, governments and institutions worldwide. In order to help us make sense of our uncertain future, Policy Horizons Canada engaged Michell Zappa of Envisioning Technology to explore key technologies that are likely to have a profound effect on humanity on a global level and generational timeframe. This report is structured around six key areas of technological research: digital and communications, neuro and cognitive, health, agricultural and natural manufacturing, nano and material science, and finally energy. It provides a sense of how broad and far-reaching our future technologies might be. Digital currencies, hydrogen energy storage, brain-to-brain interfaces, and robotic farms are all likely to be common before 2030. Each of the six key areas indicates the dozen or so interdependent technologies that are most likely to have a high impact on society and the economy. The six images provide the reader with maps of how the technologies portrayed in each area are likely to mature over the next 15 years; that is, our best estimate of the point at which a technology matures so that it can be used.

Below is a diagram on energy technologies. It identifies three key areas of accelerating change: Storage Technologies, Smarter Grids and Electricity Generation. Changes coming in energy storage involve less-expensive ways of storing energy, either in improved batteries, as new fuels or other ways. A smart grid is a set of technologies that pairs information with electricity, enabling more efficient generation and use of energy; as energy sources become more distributed and dispersed, using data associated with producers and consumers of energy will be key. New kinds of electricity generation will include both technologies that generate power from presently unused sources and those that will more efficiently produce electric power or fuels from sources in use today.



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