

Statement of Evelyn Wang
Nominee for Director of Advanced Research Projects Agency – Energy (ARPA-E).
Senate Committee on Energy and Natural Resources
April 28, 2022

Chairman Manchin, Ranking Member Barrasso, and distinguished members of the Committee: It is my honor and privilege to appear before you today as President Biden’s nominee to be the Director of the Advanced Research Projects Agency – Energy (ARPA-E).

I would like to thank President Biden for nominating me for this important role. I would also like to thank Secretary Granholm for her confidence in me. If confirmed, I look forward to working closely with Secretary Granholm, members of this Committee, and the dedicated and vibrant teams at the Department of Energy and our national laboratories.

I also would like to thank my family, especially my parents, Kang and Edith, my husband and sons, brothers, mentors, friends and colleagues.

I am deeply honored by the opportunity to serve as Director of ARPA-E.

I first received funding from ARPA-E over a decade ago (just two years after its founding) and have participated in multiple other ARPA-E projects since then. During this time, I have witnessed first-hand the impact that ARPA-E has had on creating innovative energy technologies, bringing them to market, and how these commercialized technologies help bolster our economic, energy, and national security.

I was born in upstate New York and grew up in southern California. Raised in an academic household, I was lucky to be exposed to science and engineering at an early age. I was particularly excited about product design, which led me to major in Mechanical Engineering at MIT. While there, I discovered the field of heat transfer and its application to energy production and management. In fact, about 90% of the world’s energy use today involves generation or manipulation of heat.

Heat transfer ultimately became the focus of my research, which included projects in a variety of industries. My graduate studies at Stanford University focused on heat dissipation of high performance electronics. Subsequently, I became a postdoctoral researcher at Bell Labs, where I used heat to accelerate immunoassays for biodefense, which also provided me with a broader perspective on industry needs.

After my PhD and postdoctoral work, I returned to MIT as a professor, with my research focused on applying nanotechnology to heat transfer. For example, my team developed coatings to enhance the efficiency of condensers in a steam power plant. In another project, we added photonic structures to solar thermophotovoltaics, thereby increasing their energy output. More recently, we built a water harvester that used the temperature differential between night and day to extract water from air.

These advances took years of research, and were not mine alone. I have been privileged to work with tremendously talented students, postdoctoral researchers, and collaborators in academia, national labs, and industry. Together, we've produced many scientific publications and patents, which in turn have inspired startup companies. These experiences have helped me develop a deep understanding of the challenges in making practical use of scientific discoveries.

For the past four years, I have also served as the Head of the Department of Mechanical Engineering, the second largest department at MIT. In this role, I have recruited the best and brightest talent, garnered resources to execute our mission, built consensus on strategy and culture, and empowered colleagues to work towards meaningful goals. If confirmed, I will bring the same dedication and passion to ARPA-E.

I also participated in the Defense Science Study Group funded by the Defense Advanced Research Projects Agency, or DARPA, which was a pivotal experience that further motivated me to serve our country. This two-year program allowed me to see first-hand our national security operations and learn from esteemed mentors including retired four-star generals. This experience showed me the critical role that our nation's innovation ecosystem plays in national security, and the importance of research security.

Our innovation ecosystem is particularly important in the context of clean, secure, and affordable energy, for which the commercial landscape could change dramatically in the coming decades. If confirmed, I will look to strengthen the ties between research and development to enable more timely, innovative breakthroughs to create jobs and provide energy security for our nation.

Maintaining ARPA-E's ethos of speed, calculated risk, internal competition, and agility will be essential to achieving these goals. If confirmed, I look forward to working with members of this Committee and leading ARPA-E to bring the most value and impact to communities across America.

Thank you very much for this opportunity to come before this Committee. I look forward to your questions. Thank you.