SWITCHING TO DIGITAL TWIN TECHNOLOGY IS A MUST FOR UNINTERRUPTED ENERGY

Energy is a key strategic issue that has emerged in our time of pandemic affecting the whole world. Measures must be taken to prevent interruption of entire systems, in particular the healthcare system, which essentially need energy at times of global pandemics, says Dr. Füsun Tut Haklıdır, the Secretary General of Association for Renewable Energy Research (YENADERS), and adds: "It is crucially important that we have uninterrupted availability of power particular to hospitals and care centers. It is therefore vital that we implement AI-assisted digital twin/digital ghost technologies in the energy industry." Outbreaks around the world can sometimes evolve into global pandemics, claiming millions of lives. Considering that we have a world population of nearly 8 billion, the traveling, working and living conditions of people, their living habits and the fundaments on which the global economy stands, it is practically impossible to avoid the impact and harm of such outbreaks despite the advances in technology. Countries must identify their strategic priorities against the ongoing COVID-19 pandemic and similar potential future situations, given the living habits and economic conditions which are difficult to change. Healthcare, food and energy supply are the priority areas for sustaining life. It is vital that hospitals and care centers have uninterrupted access to power, and countries must carefully review their power providers and transmission lines. POWER OUTAGES MUST BE PREVENTED TO SUSTAIN DAILY LIFE. As suggested by the International Energy Agency in one of their reports published in August, it is crucial to shield in particular nuclear power plants and power plants supplying larger regions against the impact of pandemics to maintain daily life says Füsun Tut Haklıdır. "Yet the lives of personnel working in such power plants are constantly at risk during the ongoing pandemic, and having alternative operators and maintenance teams for operating these plants is key to preventing potential accidents and large power outages." The concepts of "digitalization of data, transformation," which we have been hearing frequently for the past few years, are significantly picking up momentum and these conditions must encourage skeptical energy sector stakeholders acting on various motives to rapidly make the move to digitalization in energy, from production through transmission and distribution, says Füsun Tut Haklıdır, and adds: "It is particularly important that we abandon the conventional power plant perspective, and install the infrastructure to support migration to predictive maintenance applications, build digital twins of all critical power plants, and develop operability with fewer personnel at critical times, before problems arise in power plants." PREEMPT PROBLEMS BEFORE THEY OCCUR. A "Digital Twin" is defined as an identical model of a physically-visible product or service. In the context of power systems, it entails assessing data received from power systems, monitoring of operating conditions by experts in a virtual setting, identifying pieces of equipment that may cause problems beforehand, and preventing problems before they arise. Füsun Tut Haklıdır says tests that are burdensome and costly to perform under real-world conditions should be first conducted using the digital twin. "A digital twin also allows us to see the results before implementation in the principal system. To enable use of this technology in power plants, we must first provide information on artificial intelligence applications to the investor and operator segments, eliminate any deficiencies, migrate the data flow to digital, convert it to new infrastructure, adapt area experts to using artificial intelligence-assisted solutions, address amortization concerns through solution partners, and have them explain these to investors and businesses." As the world is digitized, when the power industry is affected by global issues, the whole humanity will be adversely impacted, Füsun Tut Haklıdır says and adds: "Investors' opening their companies and power plants to these new and reliable technologies will in any case strengthen their systems and improve their reliability in the long term. At the end of the day, in the energy industry, as with other sectors, only those who are able to best improve their systems will be able to move on with highest self-sufficiency and strength." BENEFITS OF THE DIGITAL TWIN/GHOST TECH. These virtual models, also

known as digital twins or digital ghosts, allow forecasting and cost and power saving based on dynamic environmental conditions or market supply and demand, while enabling preparation for changing conditions, predicting errors and alerting operators, and reducing network costs by saving energy and decreasing work safety risks. The virtual twin models are also useful for supply and demand management in renewable power plants, and rapidly solving problems, implementing and increasing energy efficiency for remote, hard-to-access sites.