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# Water and energy: an intensifying interdependence

NextGen spoke to a number of thought leaders and innovators at Water Innovation Europe 2019 about the circular economy and intricacies of the water-energy nexus. A keynote speaker was Molly A. Walton: Energy Analyst at the International Energy Agency (IEA). We caught up with her for a quick interview after a data packed presentation and here's what she had to say...



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**NextGen:** When we talk about water and energy what do you think are the big trends and challenges for the sector?

**Molly Walton:** First, it's helpful to put the water-energy nexus into context before looking at the challenges. Today, the energy sector accounts for around 10 percent of total global water withdrawals and 3 percent of total global water consumption. If you look at the other side, the water sector uses about as much energy today as Australia.

Given that energy and water demand are set to increase in the future, when we look forward we see that the linkages [between energy and water] are also set to intensify. According to analysis by the International Energy Agency (IEA), the energy sector's water withdrawals rise by about 2 percent and its consumption goes up by 60 percent by 2040 - this is a quite important point as while water withdrawals are the first limit for energy production when water availability is constrained, water consumption reduces the overall amount of water available to satisfy all users. In the water sector, the amount of energy needed more than doubles over that same time frame, with the largest increases coming from desalination, large-scale water transfer and increased demand for wastewater treatment. Examining how these demands

grow and shape the challenges we face is very important.

Now, additionally, another point we need to consider is the fact that billions of people today don't have access to electricity or water. Just under 1 billion people don't have access to electricity; more than 2.1 billion people don't have access to clean drinking water; and a staggering 4.5 billion people don't have access to proper sanitation services. This is vital to understanding where we are and where we potentially may go; so that we can anticipate potential stress points and target solutions to provide access for everyone, ensure that we're doing this in a sustainable way and to maximize some of the synergies to be as efficient as possible.

NextGen: And with regard to these challenges, is there a policy or technology measure that has caught your eye lately or you think would be particularly promising for the future?

I don't think there's only one technology solution. I think we have a lot of the technology solutions already available, which is encouraging. Improved efficiency measures can save energy and water; energy can be recovered from wastewater and used to offset some or all of a wastewater treatment plant's energy needs; fixing leaks and reducing water losses saves both energy and water; and using alternative water sources for energy production can reduce stress on freshwater resources. These can all be implemented today to great effect.

It's about getting momentum behind them, raising awareness about the benefits and opportunities with policymakers and stakeholders, coordinating efforts between the two communities [energy and water], and introducing them to the public; because, for example, there's a bit of an X factor about water reuse—which is a significant opportunity for many locations—as people are not quite comfortable with that idea that they may be drinking recycled water. So public awareness and education need to go hand in hand with governance and technology.

NextGen: Molly Walton, thank you for your insights and time.

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## Progetti correlati



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