Cook Legacy November eNews

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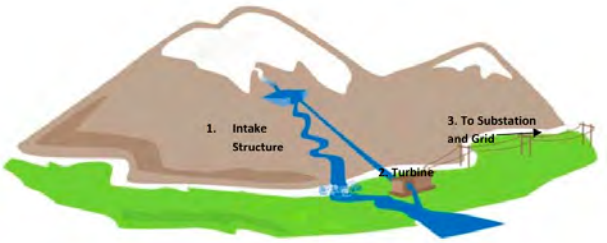
Featured In This Issue:

Expert Interview Series - Ryan Cook on Coanda Power

Interest in energy development is high around the world, particularly in the arena of green energy. Small hydropower is a way to generate power in under-served rural areas of the developing world with minimal environmental impact. However, societal challenges like lack of infrastructure impede development in these regions. Coanda Power makes small hydro simple.



Ryan Cook is at the fore of that technology. Ryan recently traveled to Tanzania and Nigeria to evaluate potential small hydropower sites. As he scouted sites and assessed conditions, Ryan met with local construction companies, government ministers, and some of the people whose lives will be impacted by electrification.
I sat down with Ryan at a local coffee house to talk about the technology, his travels, and bringing power to the global south via Coanda Power.

Randy Surface: What is Coanda Power?
Ryan Cook: It's an integrated system consisting of a modular intake box, power house, and switch gear designed to simplify and accelerate development of small hydro. It depends job to job, but we might not include the turbine in the package in Latin America. They have a turbine manufacturer who they'd like to go with. We'd provide the box.

RS: Why use Coanda power over other small hydro solutions?
RC: At its heart, it's the unique ability of Coanda Power to move water for power generation. There are three main problems in remote areas for small hydro development. First, the sites are remote. There is typically not as strong civil and technical capacity. And often site developers aren't hydroelectric experts but are still developing the site and need a simpler solution. Our goal is to make equipment to enable small developers to develop small hydro. This is a green energy solution that works.

RS: Why is Cook Legacy looking at the Global South specifically?
RC: We're interested in Africa and Latin America because they need power and the regulatory conditions let us make it there. The projects were looking at in Africa and Latin America have a two to three year development time. We'd love to build these in Maine, Colorado, West Virginia, too. In the U.S. that development time can be three or four times longer. Our hope is that we can have enough case history so that we can bring it back and be doing hundreds of projects here.

RS: You talked a little about challenges earlier. Are there specific challenges to developing small hydro in Africa?
RC: Roads and engineers. First off, you'll hear a lot about capacity building — teaching people to do stuff. Before you even travel to these places, before your I-have-an-idea funding, you require some hydrology, geotechnical research, and mapping. All these things are fairly trivial on this scale, but when that capacity isn't available it makes it difficult to execute a project.
We asked a developer building a series of big projects in British Columbia why they were winning so many of the jobs there. They said, "We can build roads."

RS: Can you tell me a bit about the process?
RC: As with all small run-of-river hydro, you're diverting a portion of water, dropping it, and running it through a turbine generator package. What makes Coanda Power special is that the box is durable, you can drop the box where you want it, and aim the water where you want it. It saves developing more complicated civil structure. If you can install it efficiently and in a short amount of time, it's a more viable solution than doing the civil work associated with normal small hydro.

RS: Why is Africa better suited to this than other small hydro?
RC: You drop in a box, route a pipe, drop a box in the bottom. In real life, there is a foundation that needs designed, but here you've got pieces as opposed to building expensive infrastructure. And it has been proven. Modular box-type Coanda screens have been used for other applications like irrigation and weed/seed separators. Norris has built those.

RS: It goes without saying that life is different in some of the countries you've visited. Can you tell me about that?
RC: One of the things we lose in the West is that we envision Africa as this place where there are giant snakes and child soldiers waiting to shoot you. That's wrong. It's pretty there. It's wild there. You have to try pretty hard in the West to be close enough to big, powerful natural things to be in danger. It's a positive that we won't get trampled by elephants or thrown off a cliff. But at the same time, we have kids who have three helmets for their bouncy seats.
There's something about the awesome power of nature...being able to stand closer to it and work with it in order to help people. We don't usually get to climb so close. I like Africa and the rural areas of Latin America for that reason. [When I traveled to Tanzania], we were near the border of Malawi. There were elephants there. I was going to take some pictures, and one of our local partners said, "Turn off the flash." I did so and took the picture. The local partner said, "He would have trampled us, and we would have surely died." That's a good safety tip.

RS: How would Coanda Power impact the lives of the people in the countries you've visited?
RC: Power is one of the fundamentals to development -- education and power. Having power brings freedom, cleaner water, better medical services, ways to get goods to market.

RS: Are you afraid that bringing power to these sorts of places will affect their inherent wildness?
RC: No, because we're not changing much. We're borrowing water for a few hundred feet. At some level there is a trade off. Right now, you and I are sitting in a coffee house that at some point in its history was probably a forest. There is a trade off between comfort and wildness.
When we began looking at Coanda, it was all about screens that didn't clog. This is bigger and more important than that. And it works.
In Tanzania, we had dinner at the village chief's house. At some point in the evening, the chief points to his ceiling. He has a little light fixture wired to a light switch, ready for power. He said, "Hurry up."

If you have a question about Coanda Power, contact us or visit CoandaPower.com.

Thank you,
Randy Surface, Communications Director

Featured Product: Cook Legacy AirBurst

Cook Legacy AirBurst systems are designed to meet site needs for cleaning of intake screens. The system provides a burst of air to a screen to remove debris. The fundamental components are a compressor to generate the air, a receiver to accumulate the air to the necessary volume and pressure, and valves to release the air to the screen. Often, the burst will be actuated by a control panel and an solenoid controlling a butterfly valve.

CL AirBurst systems are flexible, taking into consideration application, heavy debris loading, maintenance needs, and other factors. An AirBurst system can be included as a component of a new system or can be added as a retrofit to an existing system.

If your company has any questions AirBurst technology, please contact Cook Legacy.

Case Study: Montrose Creek Coanda

Cook Legacy and Norris Screen recently designed and built the largest Coanda screen project in the world. The firms teamed up to design and build a large array of Coanda effect screens for the Toba-Montrose hydropower project, which is located in the Toba Valley in British Columbia.

Coanda screens operate by shearing off layers of river flow while allowing remaining water, along with fish and debris, to travel downstream. The unique properties of Coanda Effect screens mean that the systems can provide a larger amount of energy relative to cost and/or physical footprint than other hydropower solutions.

The industry experience, expertise, and leadership of Norris Screen and Cook Legacy made them a natural fit for the massive scope of the Montrose project. The 25-screen span stretches 200 ft across Montrose Creek, making it the largest Coanda project in the world. The system has sufficient design capacity to generate enough energy to meet the annual needs of 80,000 homes.

“[It is] the largest one that we know of anywhere,” according to Tim Lilly, operations manager for Norris Screen.

Read more about the Montrose project in an upcoming edition of International Water Power & Dam Construction Magazine.

If you have a problem that Cook Legacy can help with, please contact us.

Upcoming Events:

Stop by and visit Cook Legacy at Norris Screen's booth at the Clean Energy BC Generate 2010 Conference, November 7-9.

www.waterscreen.com
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