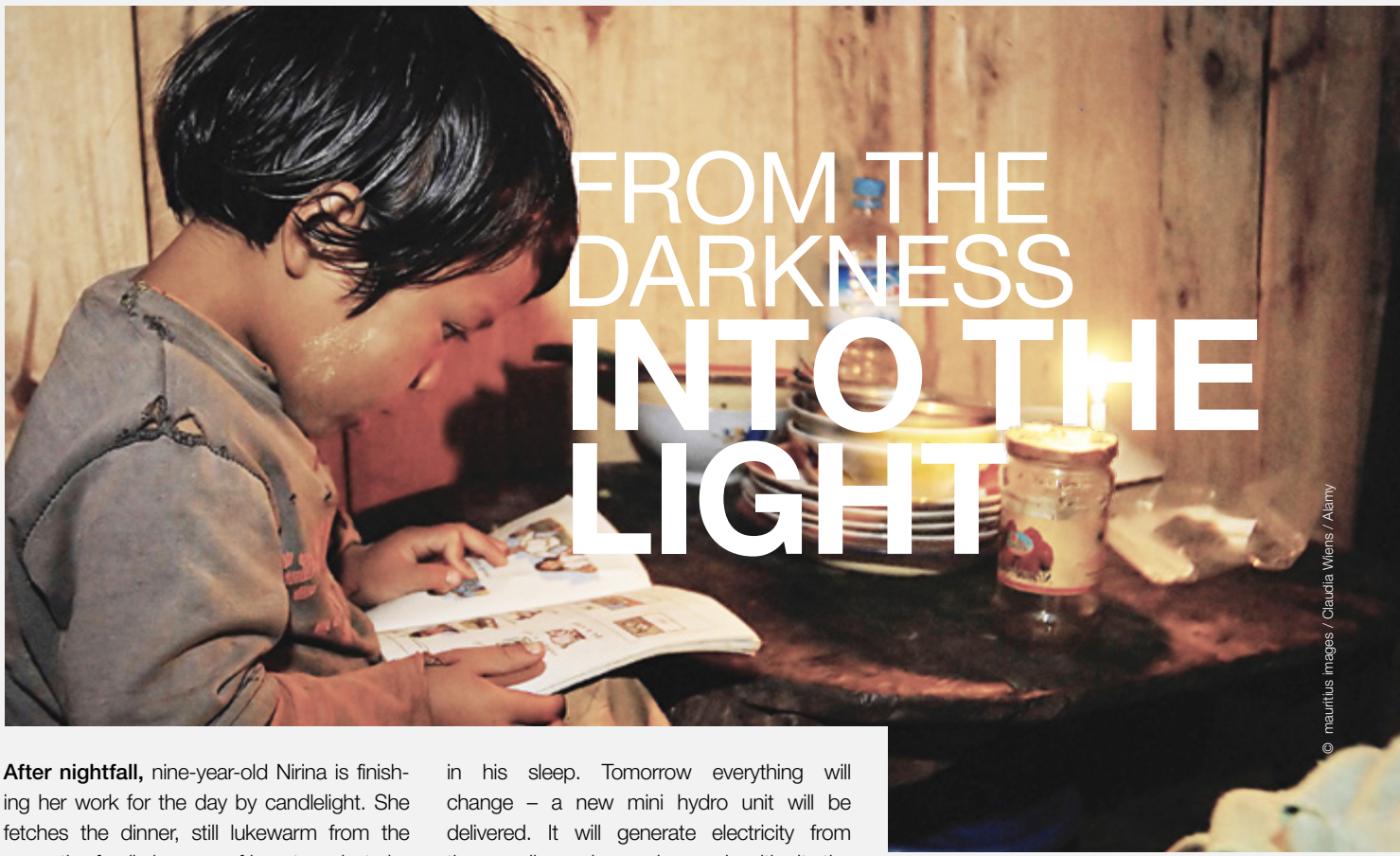
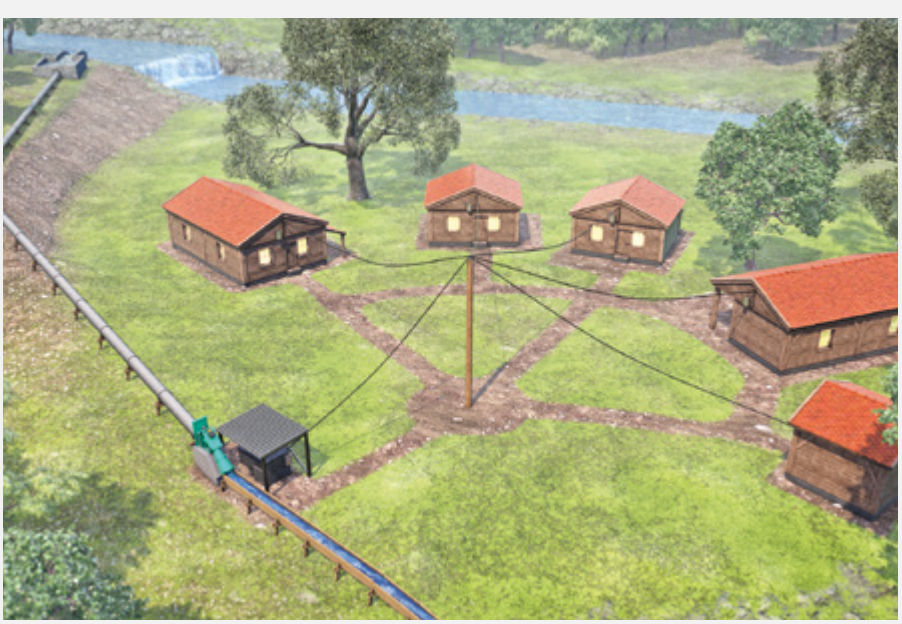


FROM THE DARKNESS INTO THE LIGHT

After nightfall, nine-year-old Nirina is finishing her work for the day by candlelight. She fetches the dinner, still lukewarm from the sun – the family has no refrigerator – but she has to hurry because her little brother Miaro doesn't like to sleep alone, it is too dark. The house has no electricity, they cannot afford the diesel for a generator and candles don't last long enough. After blowing out the candles, Nirina cuddles her little brother in his sleep. Tomorrow everything will change – a new mini hydro unit will be delivered. It will generate electricity from the small creek nearby and with it the whole village will be electrified. This means everyone will have hot water, electric light and maybe a refrigerator or even a pump for the well on the village square. Nirina is full of hope that life will get better.

Safe and secure access to electricity means a more stable economy.



Today more than one billion people worldwide have no access to electricity. Most of these people live in remote rural areas with sparse populations, where extension of a national grid connection is often technically difficult, if even possible, and costly.

Small diesel generators and solar panels are often used to provide minimal electric service, but diesel is expensive and without storage solar panels provide energy only during daylight hours.

Implementing decentralized mini grid solutions or stand-alone systems, providing safe, clean and renewable energy, is an important aspect of rural development. Access to electricity helps to alleviate poverty, to improve health care, supports better education and creates jobs.

Key features of the new **ANDRITZ HYDRO Mini-Grid Solution**

- simple, robust, reliable
- cost effective, affordable
- easy to install
- easy to operate and maintain
- hybrids with other renewable energy source (wind, solar, biomass, etc.)
- combines with potable water supply (use of excess energy)
- combines with waste water treatment

Under these circumstances, ANDRITZ HYDRO has developed a Mini Compact hydropower system with a capacity ranging from 5 kVA to 69 kVA per unit: the Mini-Grid Solution. Its primary objective is to provide robust hydropower technology which can be installed without specialist support. ANDRITZ HYDRO has a dedicated engineering team focused exclusively on this new concept.

The Mini-Grid solution can be applied in small canals, creeks or cascades, and even downstream of larger capacity hydropower projects. Using globally proven ANDRITZ HYDRO turbine models guarantee higher efficiencies. Major design characteristics, such as the need for less civil engineering works and a full workshop assembly, mean a straightforward and shorter site installation with plug and play features, an easier and simpler operation and maintenance regime. Overall, it is a cost-effective approach to providing affordable, sustainable, clean, and renewable energy for local communities.

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Ambatomanoina (Madagascar): 2 × 50 kW

The rural municipality of Ambatomanoina has about 23,000 inhabitants. Agriculture is the main livelihood of the local population. In order to electrify the small town and surrounding areas, a contract for the supply of electromechanical equipment for a 100 kW mini hydropower plant on the Mananara River was awarded to ANDRITZ HYDRO. In future, the town and the small localities of Amparihibe and Mananjary will be supplied with clean, renewable energy by this mini hydroelectric power station, securing energy access for the local people.