

## MICRO-HYDRO FOR MYANMAR: PRACTICE-TO-POLICY DIALOGUE APPLYING LESSONS FROM INDONESIA, NEPAL AND SRI LANKA

EXCHANGE'S AIM: TO FACILITATE DIALOGUE BETWEEN DECISION-MAKERS IN MYANMAR AND THEIR COUNTERPARTS IN COUNTRIES THAT HAVE SUCCESSFULLY IMPLEMENTED MICRO-HYDRO

**Location:**

Yangon, Myanmar  
Shan State, Myanmar

**Technology:**

Micro-Hydro  
Hydroelectric Power

**Scope:**

Practice-to-Policy

**Costs:**

Total: € 38,000  
WISONS financial support: € 38,000

**Host Organization:**

Renewable Energy Association of Myanmar  
(REAM)

**Partners Involved:**

PT Entec Indonesia  
Alternate Energy Promotion Center Nepal  
Practical Action Nepal  
Janathakshan

**Exchange date:**

03/2014 – 03/2015



Picture: WISONS

### EXCHANGE NEED AND OBJECTIVE(S)

In Myanmar the per capita consumption of electricity is among the lowest in Asia at 100 kWh per year. The rural electrification rate is 26%, with vast regions of the country beyond the reach of the grid. With its mountainous terrain and abundant rain in many areas, Myanmar has excellent potential for developing community-scale hydropower but, historically, Myanmar's rural electrification efforts have not focused on micro-hydro or other types of decentralised energy as key components for providing energy services to rural areas. The focus has instead been on increasing access to electricity through the expansion of the central grid. Addressing the domestic power sector challenges in Myanmar will require a variety of measures, but community-scale micro-hydropower presents particular promise as an equitable, economical and sustainable solution that can be more rapidly deployed in some areas

than conventional grid extension.

Recognising these opportunities, this exchange, which was organised by the Renewable Energy Association of Myanmar (REAM) - a member of the National Energy Management Committee - comprised a practice-to-policy dialogue on the potential of micro-hydro power for Myanmar. The workshop provided decision-makers and key stakeholders in Myanmar with an opportunity to interact with key actors involved in successful micro-hydro programmes in Indonesia, Nepal and Sri Lanka, in order to formulate a strategy for advancing micro-hydro small power producers (SPP) in Myanmar.

The main objectives were to generate micro-hydro advocacy and create awareness of successful policy models and best practice in scaled micro-hydro programmes in South and Southeast Asia to support Myanmar practitioners and policymakers with lessons learned.

Furthermore, the workshop aimed to learn from Myanmar stakeholders and visited Myanmar micro-hydro sites to understand micro-hydro challenges and opportunities in two regions of Myanmar.

### PARTICIPANTS & TARGET GROUP(S)

The event brought together policymakers, small power producers, players in the field of rural development and civil society groups to take a closer look at successfully scaled micro/mini-hydro programmes in Indonesia, Nepal and Sri Lanka, in order to develop appropriate efforts to leverage micro/mini-hydro for rural Myanmar.

### ACTIVITIES

The programme included activities in Yangon and Shan State, Myanmar, from November 24-28, 2014. On the first day,

following an introduction to the Myanmar energy scenario, experts from Indonesia, Nepal, Sri Lanka and the United States gave comprehensive presentations on key aspects of sustainable micro-hydro programmes, such as success factors, technology delivery, financing and policy mechanisms. External actors presented on innovations and possibilities for Myanmar. During day 2 local micro/mini-hydro practitioners from Myanmar's Shan State presented on their achievements and challenges, followed by interactive group discussions. The field visit on days 3 and 4 was to a village micro-hydro site in Shan State, its community and regional local manufacturing workshop facilities, with follow-up group dialogue. The last day focused on developing a vision and recommendations to leverage MHP for empowering rural Myanmar.



## RESULTS & IMPACT

The practice-to-policy exchange was very successful and resulted in a number of key findings and subsequent activities. To prepare for the event, REAM conducted a field assessment of the Shan State region, which revealed the existence of hundreds of functioning projects developed by local micro and mini-hydro practitioners. Experienced practitioners are also said to exist in the Chin, Mandalaya and Kayin regions, but a formal assessment to identify them and assess their skills is needed.

The event itself contributed to minimising the gap between Myanmar micro-hydro practitioners, the government, policy actors, the private sector, international aid and investment groups, and micro-hydro advisors. It became clear that decentralised

renewable energy is considered to be a viable component for the electrification of rural Myanmar by the majority of stakeholders. The event contributed practical and policy insights to Myanmar's extensive energy reform process.

Additionally, as result of the workshop, follow-up activities including next-step meetings and events comprising multiple interest parties were achieved:

- The United Nation's Sustainable Energy for All Initiative (SE4ALL) invited REAM and the Shan State practitioners to present at their key brainstorming meeting for off-grid and mini-grid efforts in January 2015.
- The World Wide Fund for Nature included micro-hydro in their DRE efforts for Myanmar.
- The Global Integrated Service Group of Companies engaged the Shan State micro-hydro practitioners in a proposal to demonstrate improved new and upgradeable projects.

## LESSONS LEARNED & RECOMMENDATIONS

A number of lessons emerged from the dialogue between the delegates from Myanmar and the international attendees. The existing experience from decades of work in scaled and sustainable micro-hydro programmes in Indonesia, Nepal and Sri Lanka should be applied to the micro/mini-hydro sector in Myanmar. There is no need for Myanmar to follow the same learning curve if leap-frogging is possible.

Some communities with operational stand-alone MHPs have become wary of micro-hydro technology due to the need for constant maintenance and issues of low output in low quality projects. They consider the extension of the central grid as more progressive. However, in contrast, it is promising that increasing numbers of communities are approaching local practitioners to develop their own micro-hydro sites.



International experts consider that upgrading and promoting new micro/mini-hydro projects could be more efficient and effective than extending the central grid. To ensure better quality manufacturing, skills training is required on turbine fabrication, load controllers and grid connectivity. Consequently, the development of a technical assistance (TA) programme is recommended for providing training to Myanmar micro and mini-hydro practitioners, in parallel to providing financial assistance and developing policies in order to ensure sustainability and integration with mainstream rural electrification policies.

Source: Final Report submitted to  
WISIONS by REAM  
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