

**JAG-Seabell to prove effectiveness of its world-leading small hydro tech—that needs NO dam—in India**

A joint JAG-Seabell proposal—a feasibility study for a micro-hydropower system technology demonstration project in India, whereby electricity is generated utilizing the low-head water flow of a thermal power station discharge canal—has been adopted by the New Energy and Industrial Technology Development Organization (NEDO). The joint proposal by Japan Asia Group subsidiary Seabell International, with support from Sojitz Machinery Corporation, was in response to NEDO’s tender for projects to demonstrate energy efficient (Japanese) technologies on the international stage.

*Company backgrounds*

Japan Asia Group aims to make green communities a mainstream reality. Its subsidiary, Seabell, has developed a world leading micro hydropower system (that only requires ultra-low water head), *Stream*. Seabell is expanding its reach beyond Japan into Asia and Africa. In addition, Japan Asia Group and Seabell worked in cooperation with the Sojitz Machinery Corporation which is a part of the Sojitz trading group.



Project Site Photo

■Project Overview

Country	The Republic of India
Location	Suburb of Mumbai
Objective	Project to demonstrate feasibility of installing micro hydropower systems in discharge channels of thermal power stations
System details	Patented ultra-low head micro hydropower system for mini grids: <b>Stream</b> (free-standing turbine system)
Generation capacity	Rated generation capacity approx. 30 kW (power rating limit approx. 50 kW (when expanded)) X 12 units = 360 kW
Estimated completion	March 2016



## ■ About Small Hydro Stream

This system was developed by Seabell and is a small hydro generation system that harnesses, extracting power from free-flowing water. This differs from conventional systems which use a dam to create a vertical drop in the level of water (known as water head) and to house the turbine for generating electricity. This system can optimize energy from waterways with little to no water head, namely three meters or less.

### Features

- Can be used in low head waterways that are difficult for conventional (dam-based) hydroelectric generation systems (irrigation canals, sewers, industrial drains)
- No changes to existing water ways necessary; engineering and installation done easily and affordably with the construction period only about three days.
- Can function as a distributed energy system. It can also be used as backup power in times of disaster or other emergencies.
- Cost has been reduced greatly by extensive standardization and unification of the parts into a single unit. This is a simple machine that can even be maintained by local industry.

**<< About Japan Asia Group Limited >>** <http://www.japanasiagroup.jp/english/>

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At Japan Asia Group we are forging a solid future for Japan and the world by building *green communities* that are at one with nature and loved by residents. We are pursuing aggressive growth in Japan, Asia and the world through close cooperation and mutual support amongst our three technical divisions and our financial services division, through which we can provide the capital for industrial and social development. Geospatial Information Consulting, the first of these technical divisions, is for the development of geospatial data and the formation and use of integrated databases (GIS) as a new form of social infrastructure to support lifestyles and economic activity. Second, its Green Property division promotes the development of low-carbon eco towns that are resilient to disasters, and aims to increase property values while also increasing environmental value. The third technical driver of growth is its Green Energy division, where it has the capacity to take on entire renewable energy (mostly solar PV) projects right from planning, due diligence and financing through to construction, operation and maintenance.

< Company Name >	Japan Asia Group Limited
< Stock Listing >	TSE (Tokyo Stock Exchange) Mothers (index: 3751)
< Head Office >	2 Rokubancho, Chiyoda-ku, Tokyo, Japan 102-0085
< Capital >	3,994 million yen
< Employees >	2,947 (consolidated, as of the end of March, 2014)
< Group Companies >	79 (as of the end of March, 2014)

**<<About Seabell International Co., Ltd.>>** <http://www.seabell-i.com/en/>

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Seabell International's history started in 2004 when it began research and development in earnest to create a new and innovative small hydropower generation system.. In 2007 it was granted a patent for its hydroelectric generation turbine, the predecessor of the current small hydro *Stream*. Subsequent research and development won Seabell the New Energy Foundation



Chairman's Award for innovative new energy in 2012 as it developed world-first technology with its ultra-low head turbine and electricity generation system.

Seabell will double its efforts to provide society with clean energy solutions under its corporate philosophy of "Technology and manufacturing are our pride and glory".

<Company Name > Seabell International Co., Ltd.

<Head Office > 2-8-11, Mansan Building, Higashi-Kanda, Chiyoda-ku, Tokyo, Japan

<Capital > 214.9 million yen

<Business description > Renewable energy business (small hydro specialized company)

(1) Research and development, (2) Manufacture and sales

(3) Consulting, designing and drawing, and

(4) Technical cooperation and technology transfer

## << Contact Information >>

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