



**ASX RELEASE** 

Monday, 11th December 2017

# **Stock Exchange Announcement**

Authorised Investment Fund Limited is a shareholder in Endless Solar Corporation Limited (ESC). We have received the attached updated information from ESC about their CoolSolar project.

We trust the above is of interest to shareholders and look forward to providing more information in due course.

- Ends -

On behalf of the Board

Cathy Lin

**Company Secretary** 

Capital as at 30 Nov 2017 Total Shares: 147,127,312 Options: 16,600,000



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## **ENDLESS SOLAR IN 2018**

#### **Executive Summary**

The Board of Endless Solar Corporation (ESC) is looking forward to 2018 with optimism. Over the past few years, we have been working on progressing towards commercialisation with the Cool Solar air conditioning system. We can now advise that ESC and ANU have signed an agreement covering the Intellectual Property (IP) licensing for the components in the Cool Solar, which when combined with ESC's patents, gives us the ability to commercialise a solar hot water driven, energy efficient air conditioning system for the Australian and international markets.

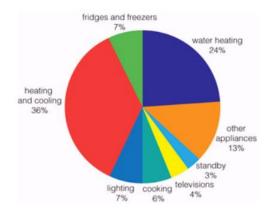
The key milestones of the commercialisation process are:

- ANU is supplying models that assist the design and modelling process that will allow us to develop the components required to produce our solar air conditioner.
- ESC to commence construction of the first commercial unit in January 2018 in conjunction with our tank manufacturer Wise Living Products.
- ESC to progress further the next stage of funding the project with Defence Housing Australia (DHA). To date, discussions have been positive.
- ESC to further develop it's patented "A method of fabrication an ejector for a solar energy system" to diversify our protection to competitive activities.

ESC will keep the markets informed as to progress of these developments and milestones during 2018.

#### Markets

Solar air conditioning would seem to be an obvious approach to reducing our current national energy issues and improving Endless Solar's turnover. The sun shines when we need to cool, and Australia has an excellent solar resource. However, there are currently no commercially viable solar air conditioning options for residences. The market for air conditioners in Australia is about 1.4 million units per year. Around 72% of Australian houses now have air conditioners, most of which are reverse cycle heat pump units. Greenhouse gas emissions resulting from residential air conditioners in Australia are equivalent to emissions from about 1.5 million cars. The markets for Cool Solar are not just in Australia which is why we have patent protection for the system in many regions including China, India, Europe, USA, Brazil and Japan.



Heating, cooling and hot water is approximately 60% of the average domestic homes energy consumption which is why combining evacuated tube technology with Cool Solar is an essential pathway.

Source – Peacock Media Group



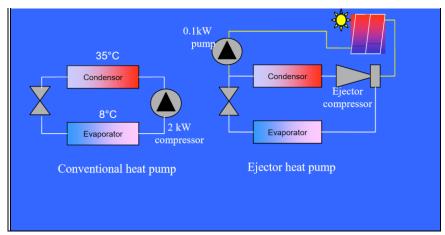
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#### What is Cool Solar

Cool solar is an air-conditioning system, using solar heated water to produce cool air.

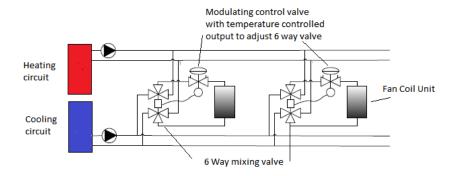
Cool Solar will replace the electrical compressor in a conventional air conditioner with a solar powered thermal compressor, basically a hot water injection system that will pump hot water at an extremely high velocity causing cold water to be produced and hot water as a by-product for residential use. Solar power is provided in the form of heat (not electricity!) from conventional solar water evacuated tubes. A solar driven heat pump has potential to perform comfort air conditioning more effectively than other solar technologies. It also is able to solar heat a home in winter and provides solar water heating year-round from the one solar collector, thus removing the main impediment to uptake of solar cooling – the cost effectiveness of the collector. The system will have no moving parts, minimal electricity usage, no water consumption, no fluorocarbon refrigerant and it should be cheap to manufacture. These features make the system suitable for residential application. The ability of the system to run cost free during the productive daylight hours will assist in maintaining a more constant, comfortable, living environment.



The comparison between a conventional air conditioning circuit and an ejector circuit with solar collector

## **Delivery system**

Once the water has been cooled the water is transferred around the building for distribution through outlets such as the ceiling mounted fan coil unit below.





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Typical Fan Coil Unit

The strength of our product range and viability of the massive energy savings offered by Cool Solar makes a clear decision choice to change our market focus. The Australian electricity grids are under severe stress during peak loads in summer, in fact the CSIRO has calculated that 50% can be attributed to air conditioning.

## **Going forward**

Manufacturing of an operational commercial scale system will commence as soon as the final documentation is received from ANU. Wise Living Products have the facilities and expertise to manufacture most components used in the system. They also have extensive experience in the domestic heating market which will enhance the delivery of the system. There are a number of previously in house produced components that have become commercially available since ANU completed the initial setup which will help to hasten the system delivery.





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## **Outlook for Endless Solar Corporation**

The past 12 months have not been the best for ESC. The company has been forced to change tank manufacturers again as a major supplier went into receivership, and deal with a market shift towards Photovoltaic (PV) power generation by the previous major supporters of solar hot water technology, green environmentalists.

Across the industry, sales are significantly down with the Federal Department of The Environment and Energy showing only a 0.2% growth for solar hot water in the past 12 months compared with an average of just over 1.0% annually over the past 10 years.

In response to toughening market conditions, ESC has introduced pre-assembly of systems to reduce installation costs for the purchaser, developed DIY kits for rural customers, designed and manufactured new mounting systems to reduce installation time. The company has a new tank manufacturer, Wise Living Products from Albury NSW. This family run business has been trading for more than 50 years, and we look forward to a more secure tenure with them. We have just gained approval from the Clean Energy Regulator to use their tanks and can once again offer rebates with our systems.

Cool Solar is the obvious choice of solar air conditioning to the customer, offering environmental benefits and peak load power cost saving opportunities. The focus of both government and industry is energy reduction gives ESC a clear direction forward with the Cool Solar project. The significant savings offered with Cool Solar especially in peak energy load periods gives a clear indication of the successful benefits ESC will offer with this new product range. Cool Solar has been chosen to operate in a marque environmental building being constructed in Melbourne using a ground-breaking waste recycling system to generate power and run Cool Solar as a by-product. In addition, the prospects of international licensing to markets outside Australia also improves the outlook for ESC in the years ahead.



We look forward to reporting our progress during 2018.