

## EPFL Achieves 21% Efficiency for Perovskites

**Queanbeyan, 8 December 2015** – Dyesol Limited (ASX: DYE) is very pleased to announce that a research team headed by Professors Michael Grätzel and Anders Hagfeldt at the Ecole Polytechnique Fédérale de Lausanne (EPFL) has established a new world record efficiency for its Perovskite Solar Cells (PSC), with a certified conversion efficiency of 21.02%.

The conversion efficiency of 21.02% was certified at the laboratories of Newport Corporation in Bozeman, Montana USA. Newport is one of a few institutions in the world that is accredited to issue certifications for such photovoltaic cells. This new conversion efficiency eclipses the previous record of 20.1%.

Dyesol, as a pioneer licensee of EPFL, has access to EPFL intellectual property in the field of perovskite and dye solar cells, in addition to its own IP covering materials, related processes and photovoltaic cell design.

Professor Michael Grätzel commented:

“I would like to make particular mention of the very significant contribution of my colleague Professor Anders Hagfeldt and his team in achieving this world record result and I am confident that we will continue to make rapid progress that demonstrates the extraordinary commercialisation potential of this revolutionary solar technology.”

Managing Director Richard Caldwell also commented:

“With the EPFL forging ahead on efficiency and Dyesol focussing intensely on proving up the stability and durability of Perovskites, we are an excellent team to tackle the massive commercial opportunity presented by this potentially cheaper and more versatile alternative to conventional solar PV technology. The progressive replacement of fossil fuels by solar PV in many applications is not a matter of if, but when.”

Professor Michael Grätzel is Chairman of the Dyesol Technology Advisory Board.

### About DYESOL LIMITED

Dyesol is a global leader in the development and commercialisation of Perovskite Solar Cell (PSC) technology – 3rd Generation photovoltaic technology that can be applied to glass, metal, polymers or cement. Dyesol manufactures and supplies high performance materials and is focussed on the successful commercialisation of PSC photovoltaics. It is a publicly listed company: Australian Securities Exchange ASX ([DYE](#)) and German Open Market ([D5I](#)). Learn more at [www.dyesol.com](http://www.dyesol.com) and subscribe to our mailing list in English and German.

### About PEROVSKITE SOLAR CELL TECHNOLOGY

Perovskite Solar Cell (PSC) technology is a photovoltaic (PV) technology based on applying low cost materials in a series of ultrathin layers encapsulated by protective sealants. Dyesol's technology has lower embodied energy in manufacture, produces stable electrical current, and has a strong competitive advantage in low light conditions relative to incumbent PV technologies. This technology can be directly integrated into the building envelope to achieve highly competitive building integrated photovoltaics (BIPV).

The key material layers include a hybrid organic-inorganic halide-based perovskite light absorber and nano-porous metal oxide of titanium oxide. Light striking the absorber promotes an electron into the excited state, followed by a rapid electron transfer and collection by the titania layer. Meanwhile, the remaining positive charge is transferred to the opposite electrode, thereby generating an electrical current.

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### Media & Investor Relations Contacts:

Dyesol Headquarters: Tracy Benillouz, Investor Relations and Marketing Manager, Tel:+61(0)2 6299 1592 or email [tbenillouz@dyesol.com](mailto:tbenillouz@dyesol.com)  
Germany & Europe: Eva Reuter, Dr Reuter Investor Relations Tel: +49 177 605 8804, [e.reuter@dr-reuter.eu](mailto:e.reuter@dr-reuter.eu)