

## Solvay ready to join Solar Impulse 2 on its trip around the world

Brussels, April 9, 2014 --- Solvay is proud to join founders and pilots Bertrand Piccard and Andre Borschberg in the unveiling of Solar Impulse HB-SIB, the upgraded second version of the solar airplane that will begin its world tour in early 2015 without using a single fuel drop.

From day one and for ten years now, Solvay has been part of the adventurous Solar Impulse project, which in 2004 many thought was inconceivable. With this "Flying Lab" Solvay has put into practice its expertise in advanced materials and sustainable energy, enabling the first Solar Impulse to fly around the clock only on the sun's energy. It has pushed the boundaries of innovation, technical expertise and entrepreneurship.

Compared to Solar Impulse 1 (Si1), which successfully completed its coast-to-coast flight through the United States last year and the crossing of the Mediterranean Sea in 2012, the technologies on the larger Solar Impulse 2 (Si2) have advanced to boost energy efficiency. This time, it is fit for its "Round-The-World Solar Flight".

*"Solvay has shown with both Solar Impulse projects its key contribution as a chemical solutions and advanced materials provider in the development of alternative and sustainable energy sources,"* said Solvay Chief Executive Officer Jean-Pierre Clamadieu. *"Solvay's advanced solutions and materials contribute to the energy transition and help tackle the challenges that society is facing with an expanding population."*

*"For Solvay, Solar Impulse represents innovation without limits, replacing weight with smart solutions. Taking on this project which many experts didn't believe in, has forged a strong, entrepreneurial team spirit. It has led to an unmeasurable sense of pride that the vision of a solar plane, flying day and night without fuel, has become a reality,"* added Solvay Executive Committee member Jacques van Rijckevorsel, who initiated the project for the Group in 2004.

Solvay researchers, chemists and engineers in Belgium, Brazil, France, Germany, Italy and the United States have left their marks on both planes which carry about 6,000 Solvay parts. Solvay's 13 products on the Si2 have enhanced its performance while keeping weight to a minimum. With a 72 metre wingspan, the plane's weight 2.34 tons is similar to that of a jeep, while its horse power is similar to a motorbike's.

Thanks to Solar Impulse, Solvay's advanced chemical solutions and advanced materials have accessed a host of promising new markets, including solar panel protection, computer and mobile phone batteries, baggage compartments on planes and sustainable solutions in mobility.

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## Solvay, the technological partner of Solar Impulse

Reconciling light-weight with performance in weather conditions where temperatures vary from -40°C to +40°C, where does Solvay make a difference?

➤ **Capturing energy:**

- An ultra-thin polymer film Halar ECTFE® protects the solar panels and 18,000 photovoltaic cells now also against moisture, making the Si2 a waterproof electric plane.
- Highly sophisticated adhesive tape Solstick PVDF Solef® closes the tiny gaps between the solar cells and allows them to move along with the wings.

➤ **Storing energy:**

- Solvay components PVDF Solef® and F1EC enable energy storage in the 640 kg of lithium-ion batteries and improved energy density to 260 Wh/kg from 240 Wh/kg in Solar Impulse 1.

➤ **Optimising energy consumption:**

- With lubricant Fomblin PFPE® the mechanical parts resist wear and rust, reducing maintenance and energy use.
- The cockpit's fairing is made of an ultra-light weight, insulating polyurethane with a special foaming agent, Solkane 365 MFC®.

➤ **Light-weighting overall structure and parts**

- The wing spar contains a refined honeycomb structure, made of paper impregnated with the Torlon® PAI polymer. This gives excellent properties: strength, torsion, flexion, vibration.
- Mechanical parts, such as fasteners and screws, are made of very robust yet lightweight materials such as specialty polymers Ketaspire® PEEK and PrimoSpire® SRP.
- Complex mechanical parts, such as lighting clips or the housings for the cockpit equipment, are from Polyamide 6 Sinterline™ and tailor-made by the 3D Selective Laser Sintering printer.

➤ **And beyond the plane, the well-being of the pilots:**

- The pilots' underwear is made of the Emanax® polyamide 6.6 yarn, a smart fibre which interacts with the body, stimulating micro-circulation and helping muscle performance.

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As an international chemical group, **SOLVAY** assists industries in finding and implementing ever more responsible and value-creating solutions. Solvay generates 90% of its net sales in activities where it is among the world's top three players. It serves many markets, varying from energy and the environment to automotive and aerospace or electricity and electronics, with one goal: to raise the performance of its clients and improve society's quality of life. The group is headquartered in Brussels, employs about 29,400 people in 56 countries and generated 9.9 billion euros in net sales in 2013. Solvay SA (**SOLB.BE**) is listed on **NYSE EURONEXT** in Brussels and Paris (Bloomberg: **SOLB:BB** - Reuters: **SOLB.BR**).

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