Analysis of the Technological Innovation System for BIPV in Italy

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EXECUTIVE SUMMARY

This report analyses the Technological Innovation System (TIS) of Building Integrated Photovoltaic (BIPV) technology in Italy. The TIS analyses and evaluates the (possible) development of a particular technological field, the structures, the processes, and the factors supporting or hampering it.

Italian BIPV experienced a strong innovation period with the past Feed-in Tariff (FiT) Law supporting the so-called totally integrated PV and Innovative BIPV, which resulted in more than 2,5 GW of BIPV out of a total PV capacity installed of 18 GW. After the end of the FiT era, the market slowed down and in 2017 it experienced a slight recovery. However, as shown in this report, the typologies of the systems incentivized through the past FiT schemes remain today, with new products entering the market.

The structural factors of TIS such as technology, actors, networks and institutions are highlighted, together the phase of development of BIPV in Italy. Afterwards, the functional analysis of the TIS has been carried out, exploiting the results of interviews with stakeholders, publications and detailed analysis of patent applications for BIPV products over more than twenty years. With the above-mentioned results, eight functions have been analysed and later scored, to assess if each function is sufficient for the development of the TIS.

This analysis shows a niche market with significant potential from the past FiT law and for the new challenges of the Italian National Energy and Climate Plan, with some difficulties to overcome, like i.e., the lack of a BIPV (product) association, and other subjects to face. Among the last ones, it is worth to mention product costs, performance, BIPV reputation and the need to work with superintendencies in order to install BIPV in the centres of the historical cities.

The weaknesses and strengths of the system are investigated, leading to the recommendations, which explores the main topics analysed and their possible solutions, such as, i.e., the need to integrate (or to better indicate) BIPV technology into national regulation, or the demand of training for public administration and of involving finance in the BIPV business. Other recommendations are related to certifications and patents costs.

The report closes with a question concerning an issue related to the integration of BIPV in historical heritage of Italian cities, and it is related on one side to technology, on the other, the language of architecture. This question is the cornerstone for BIPV development in Italy and it opens to further analysis.