

## Facilitating the authorization of SDH plants

Subject:	Facilitation of authorization for SDH plants by addressing visual impact issues
Description:	This document describes the measure regarding the development of a pilot SDH plant in the capital city of Aosta, addressing in particular the visual impact issue.
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Document download:	<a href="http://www.solar-district-heating.eu/">www.solar-district-heating.eu/</a>

### Summary description of the instrument

Region: Valle d'Aosta

Partners involved: Ambiente Italia (SDHp2m partner), COA Finaosta, Valle d'Aosta Region, Telcha Srl, Cogne Acciai Speciali, VDA Structure, Varese Risorse - A2A (stakeholders)

Short description of the measure.

The development of a pilot SDH plant in the capital city of Aosta will act as a real policy measure to foster the diffusion of SDH solutions as a viable alternative to fossil-fueled district heating networks.

In order to reach such an objective, the barrier of mistrust and skepticism towards the visual impact of solar panels, especially in high-quality landscape mountain areas such as the Valle d'Aosta region, should be overcome by finding alternative low-impact solutions for the installation and through an awareness raising activity towards Regional and Local Administrations.



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### Initial situation

As in many Italian regions, SDH is not a well-known solution for heat supply in Valle d'Aosta. Therefore, one of the best policies to foster its diffusion is to act through bottom up measures as, for instance, the realisation of a pilot SDH plant which can be a real showroom for such a technological solution.

The DH network in Aosta is, at the moment, fueled by natural gas and industrial waste heat, also through a large heat pump. The current network has an extension of 23 km and a heated volume of 1.2 Mm<sup>3</sup>, with 270 connected users and a heat demand of about 55 GWh. The final goal is to reach a network extension of 47 km and to cover a heat demand of 154 GWh. Such an extension could be partially supported by the contribution coming from the solar heat.

### Objectives

The objective of this measure is to cooperate with the local utility managing the DH network in Aosta and with the Regional Administration to develop a pilot SDH plant which can be a 'living example' of the feasibility of the SDH solution also for other smaller towns and villages in the Region.

Through this measure, also secondary objectives can be reached:

- Awareness raising of final users aiming at demonstrating that district heating could be green and efficient.
- Showing the feasibility of 'higher level' applications of solar thermal beyond the domestic hot water production.
- Demonstrating the absence of relevant visual impact problems for medium-scale SDH plants, with active areas between 1,000 and 2,500 m<sup>2</sup>.



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### Measures and actions

From a technical point a view, a first feasibility assessment of the viability of a SDH integration into the Aosta network has been performed by Ambiente Italia, together with the local utility and the regional representative Finaosta. This preliminary study has shown that solar thermal could give a fair contribution for covering the summer thermal losses of the network, with a limited investment needed, also thanks to the availability of a very favourable incentive scheme at national level, the 'Conto Termico'.

Regarding visual impact and authorisation issues, a discussion has started involving the same actors reported above, which also includes the possibility of splitting the solar thermal plant in several sub-fields which could be installed on smaller roofs of industrial areas in the city or even on residential buildings. This would for sure increase the complexity and the cost of the plant development but it could be a good solution for overcoming visual impact concerns, which are mostly related to ground-mounted systems. A document describing the possible alternative solutions used in other EU countries for positioning solar thermal collectors has been prepared by Ambiente Italia and communicated to Finaosta.

Finally, since SDH is not a common technological solution in Italy, there is just one experience of authorisation procedure, coming from the SDH plant in Varese. The local utility, Varese Risorse, gave its availability to share its specific know-how about this topic with the regional stakeholders in Valle d'Aosta.

### Barriers and opportunities

As outlined above, the main barrier is to overcome the mistrust towards the installation of large areas of solar collectors. This is due above all to some bad experiences with photovoltaic plants in the recent past.

A relevant opportunity is the ongoing extension of the DH network, which calls for an additional heat supply, hopefully covered, at least partially, by a clean, local and renewable energy source as solar thermal. Furthermore, many users in Aosta are still burning LPG for heat production with a high cost and air pollution. Solar is also seen as a very good complementary source to biomass, which always creates concerns because of the air quality issue.



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### Results

The results of the preliminary evaluation of the SDH integration into the DH network of Aosta are quite encouraging, given also the financing opportunity given by the incentive scheme of 'Conto Termico'. According to this first calculation, the incentive could give back, in a 5-years period, more than 50% of the initial investment.

After this initial screening, a detailed site visit was carried out, also with the support of a technical consultancy company which is at the moment performing a detailed simulation of the pilot SDH plant to evaluate the yield and the economic parameters.

Regarding the authorisation and visual impact issues, a document in Italian summarising the main installation solutions realised all over Europe has been developed by Ambiente Italia and is currently under discussion with the regional stakeholders. Furthermore, a first exchange of information between Ambiente Italia and Varese Risorse (the utility mentioned above) has been carried out in order to collect information about the successful authorisation procedure used to develop the only SDH plant operating in Italy.

However, the areas involved in the Aosta plant should not be challenging from this point of view since they are located either on the roof or on the ground but in technical areas usually not affected by visual restrictions. A possible barrier is the restricted extension of such areas, with respect to what assessed in the preliminary analysis, which could limit the size of the solar plant well below the 2,500 m<sup>2</sup> threshold allowed by the national incentive scheme.

### Lessons learned

Solar thermal is considered as an interesting and appealing option for district heating to be 'greener' and to increase user acceptance towards this heat supply solution. However, the mistrust created by large-scale ground-mounted photovoltaic plants is still a major concern at local level, where the authorities should safeguard themselves from possible future complaints by the citizens.

A pilot example showing the low (or non existent) visual impact of medium-scale SDH plant, as the one in Aosta would be, would really act as a strong policy measure to unlock the market potential for using solar thermal in district heating networks.

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*This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 691624*