



## PROJECT SUMMARY (TECHNICAL ASPECTS)

To cope with the day-to-day and day-night fluctuations in energy production in demand, coming from RES (Renewable Energy Supply) like PV, grid operators are required to maintain variable back-up systems that often use fossil fuels. Decarbonisation of European energy systems needs to speed up in order to reach the goals set by the European Energy Roadmap and Low Carbon Europe Roadmap by 2050. The transition to RES plays a key role in the plans to reach these goals. In Europe, 21.9 GW of PV-systems were connected to the grid in 2011, compared to 13.4 GW in 2010, which is in line with the average of 40% increase during the past 15 years. This steady increase has been stimulated tremendously by countries like Germany and Italy using powerful incentives to install systems – both in terms of large power plants and distributed but grid-

connected roof-top systems for home owners. Although this trend is very positive, it offers significant challenges for the grid-operators as the predictability of solar power generation – in countries with highly fluctuating insolation, - and subsequent solar cell power output – is very limited. The CoSSMic project will allow household and neighbourhood optimisation and power sales to the network, in addition to a higher degree of predictability of power deliveries for the large power companies, and it will satisfy the requirements and achieve the benefits discussed above. The behaviour of the smart micro-grids will be governed by reward based business models ensuring sufficient rewards to the users willing to share resources and collaborate to optimise the overall working of the power grid.

