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WIRE: Weather Intelligence for Renewable Energies. COST Action ES1002

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The main goal of the COST Action ES1002 WIRE: Weather Intelligence for Renewable Energies is to contribute enhancing methodologies for forecasting wind and solar power production from minutes up to several days ahead combining numerical weather prediction (NWP) models and real-time surface and remote sensing measurements. The objectives are: to establish an understanding between the scienti[U+FB01]c and end user communities; to optimize the technical and economic integration of renewable energies and transferring knowledge across Europe and worldwide. WIRE consists of three Work Groups (WG): WG1. Modeling and post-processing. Activities in progress are: the assessment of current research activities in Europe and current knowledge gaps to highlight the existing weaknesses for all components of the renewable energy forecast system and of the adequacy of NWP models and downscaling methodologies coupled with dedicated power conversion modules to deliver accurate power production forecast. WG2. Measurements and Observations. The added value of the new observation techniques in developing power forecasting models will be quanti[U+FB01]ed. In particular, the focus will be on space-borne and ground-based remote sensing technologies for determining i.e. cloud cover, vertical wind pro[U+FB01]les, the vertical content of Liquid Water and Particle Size Distribution. Recommendations will be provided to the scienti[U+FB01]c and users communities. NWP benchmarking is being organized and results of post-processing improved forecasting systems will be evaluated selecting existing locations with wind farms and solar energy plants. Databases will be set up and formatted for direct use by the modeler's community. WG3. Power Plants and Grid Management. End-users will be involved in developing improved forecasting systems assuring a good match between the scienti[U+FB01]c and the end-user's requirements. The web page of the Action is at www.wire1002.ch