

HIGH-PRECISION DEVELOPMENT SOLAR ENERGY RESOURCE MAP FOR DIRECT TILT INSOLATION OF KOREA PENINSULA USING SATELLITE IMAGE DATA

Kwang-Deuk KIM^a, Hee-Young YOO^b, Choen KIM^c and You-Kyung SEO^{d}*

^a *Researcher, Korea Institute of Energy Researcher, Solar Thermal and Geothermal Center,
102 Gajeong-ro, Daejeon 305-343, Korea; Tel : +82-42-860-3731
E-mail: kdkim@kier.re.kr*

^b *Research professor, Dept. of Geoinformatic Engineering, Inha University,
Korea 100 Inharo, Nam-gu, Incheon 402-751, Korea; Tel : +82-32-860-7607
E-mail : yhy1003@gmail.com*

^c *Professor, College of Forest Science, Kookmin University,
Seoul 136-702, Korea; Tel : +82-2-910-4813
E-mail : choenkim@kookmin.ac.kr*

^{d*} *Graduate student, Dept. of Applied Information Technology, Kookmin University,
Seoul 136-702, Korea; Tel : +82-2-910-5080; Fax: +82-2-910-4809
E-mail : a6025@kookmin.ac.kr*

KEY WORDS: DEM, solar radiation, resource map, solar energy estimated

Abstract: Direct beam insolation on a tilted surface map is important if obtain solar energy and heat energy using flat-plate collector due to Korea peninsula that mountain area account for more than 70% of the territory area. In this paper, therefore, update maps of direct tilt insolation (i.e., direct beam insolation on a tilted surface) derived from satellite image data, for aligning sustainable development and climate change actions of Low-Carbon Society. The paper also presents accuracy and precision to address the comparison of 5m DEM-based map with 30m DEM-based map.