

**МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ
СУМСЬКИЙ ДЕРЖАВНИЙ УНІВЕРСИТЕТ
ФАКУЛЬТЕТ ІНОЗЕМНОЇ ФІЛОЛОГІЇ
ТА СОЦІАЛЬНИХ КОМУНІКАЦІЙ**



**СОЦІАЛЬНО-ГУМАНІТАРНІ
АСПЕКТИ РОЗВИТКУ СУЧАСНОГО
СУСПІЛЬСТВА**

**МАТЕРІАЛИ V ВСЕУКРАЇНСЬКОЇ НАУКОВОЇ КОНФЕРЕНЦІЇ СТУДЕНТІВ,
АСПРАНТІВ, ВИКЛАДАЧІВ ТА СПІВРОБІТНИКІВ**

(Суми, 20-21 квітня 2017 року)

**Суми
2017**

DECISION SUPPORT IN MANAGMENT OF HYBRID RENEWABLE ENERGY SOURCES

S. O. Shendryk – Sumy State University, group PhD-62

A. M. Dyadechko – E L Adviser

Nowadays the distributed energy generation and renewable energy sources (RES) are the main areas of energy development all over the world. They play a significant role in improving the reliability and quality of the supplied electricity. Various forms of RESs using solar and wind energy are also proposed.

Operation rules for Hybrid RESs (HRES) having both renewable energy sources as well as access to the External Power Grid present special interest. Such HRESs will be used in small localities which are very sensitive to the costs of the energy. Due to such approach a significant number of consumers will produce energy for their own needs as well as may send surplus to the external grid. Such implementation decreases energy losses during transportation as generators are situated next to consumers.

Operations of HRESs make a complex task. The important issue is the effective RES usage and their combination to maximize the receipt generated energy while minimizing the cost.

Future work requires the following steps. At first, implementation of a decision making support method, based on fuzzy logic for ranking alternative actions within scenarios is needed. Second, the development of the appropriate case tools to facilitate the analysis and the determination of fuzzy algorithms adapted to complex hybrid systems must also follow.

The future information model may be used in a decision support system, which allows calculating the load in the real time and to issue recommendations on the use of the RES.

Systematic, orderly brought in a total database the data allow us to give better recommendations for power supply regulation.

The research results can serve as the basis for work on the building up of a Decision Support System, which will allow simulating the work processes and receiving summary information about the systems, recommendations on their design, etc.