XSICEL 2021

Transición energética en la 4ta revolución industrial

Universidad Tecnológica de Pereira

UNIVERSIDAD NACIONAL DE COLOMBIA

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Challenges and Recommendations for the Massification of Energy Management Systems in Colombian Industry

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DER's

II. Energy Management Systems in the Industry

ENERGY MANAGEMENT SYSTEMS

- The EnMS are defined as the collection and transformation of concepts, approaches, and methodologies for allowing endusers to become active users.

BARRIERS

- The initial investment.
- The long period of return on investment
- Disinterest in banking entities
- The need to focus resources

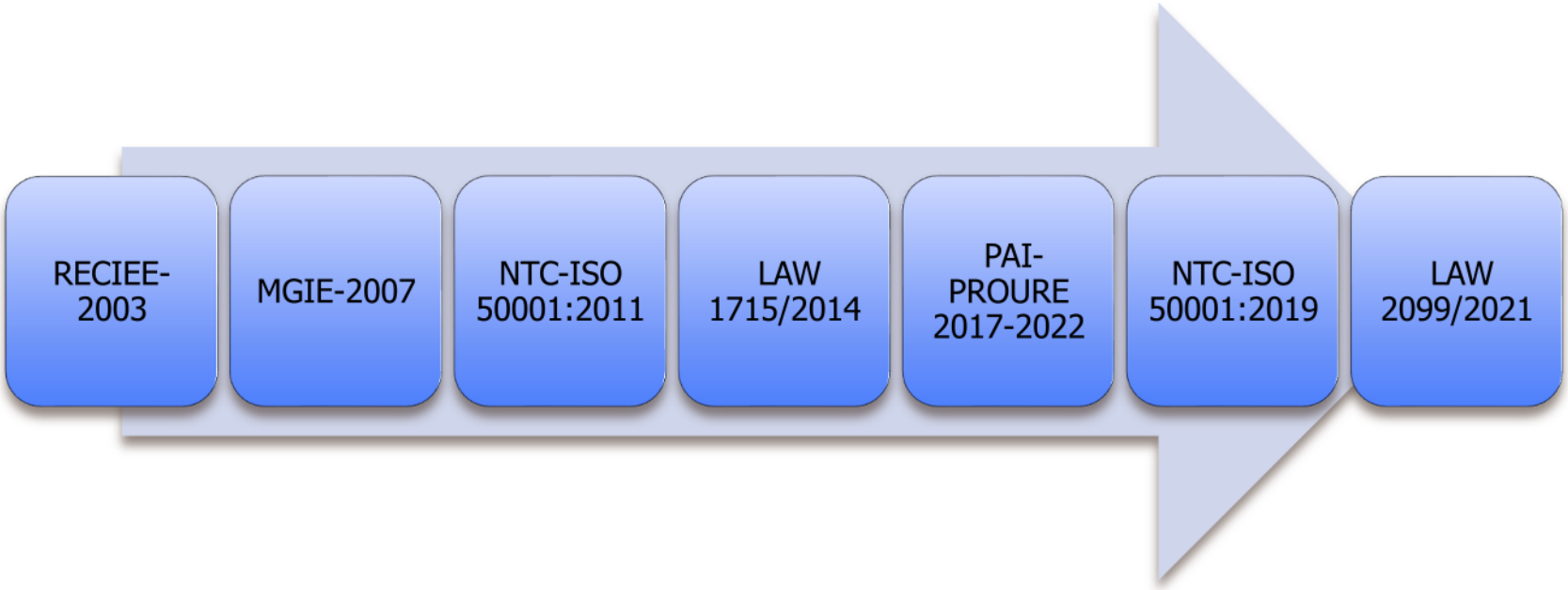
BENEFITS

- Reducing waste and losses
- reduces environmental impacts and costs in manufacturing systems

These methodological structures allow organizations to establish guidelines that promote continuous improvement at all levels of the company, creating an interaction between processes allowing to set objectives and establishing clear goals.

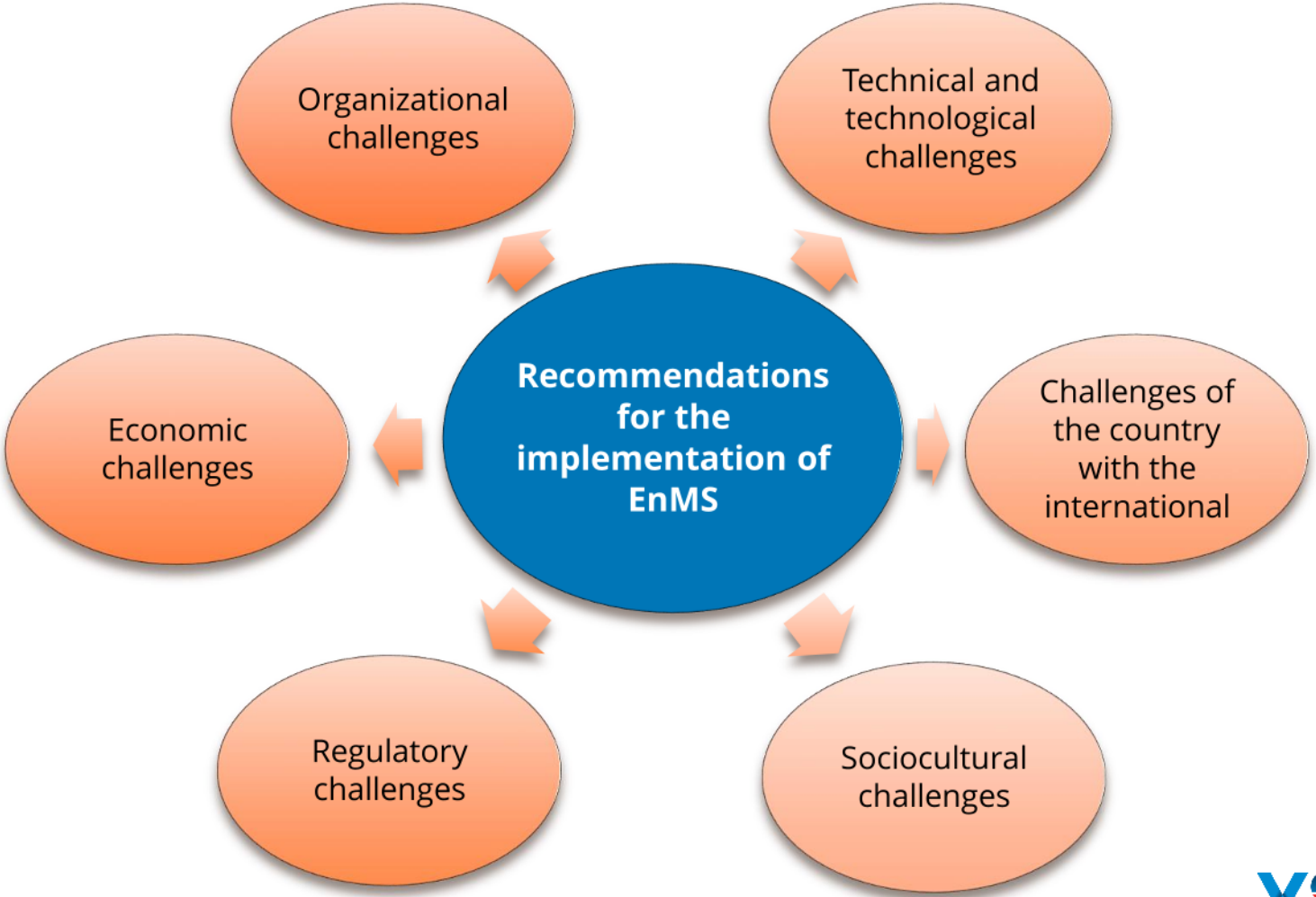
III. Colombia and the Massification of Energy Management Systems in the Framework of the Covid-19 Pandemic

Within the Colombian panorama there is a broad trajectory in energy management and in the incorporation of renewable energy sources



- The Colombian state currently has to reduce GHG emissions by 20%
- increase of energy of approximately 52% between 2016 and 2030 is projected
- The results show that the inefficiency in consumption is around 67%, which costs the country between 6,600 and 11,000 million USD per year.
- the industrial sector showing a share of 11-14% of GDP

IV. Recommendations for the Implementation of Energy Efficiency Programs in Colombia


Organizational challenges
Technical and technological challenges
Economic challenges
Recommendations for the implementation of EnMS
Challenges of the country with the international
Regulatory challenges
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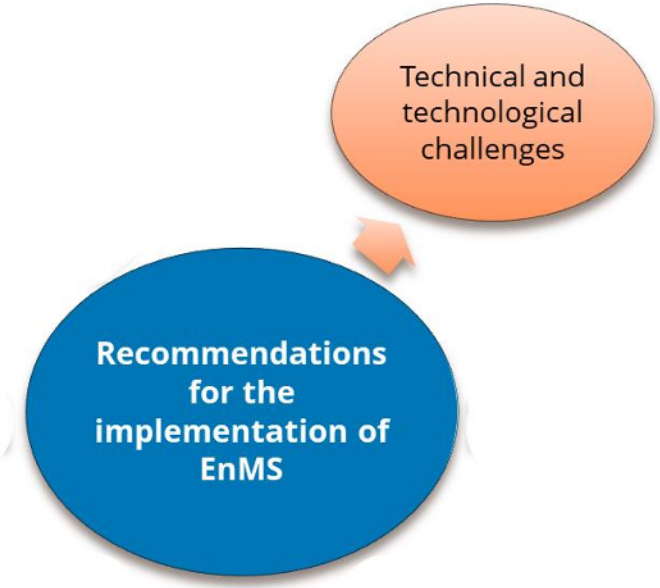
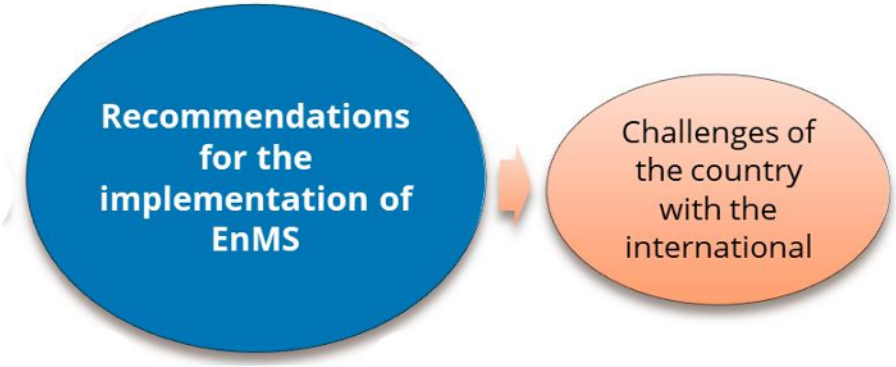
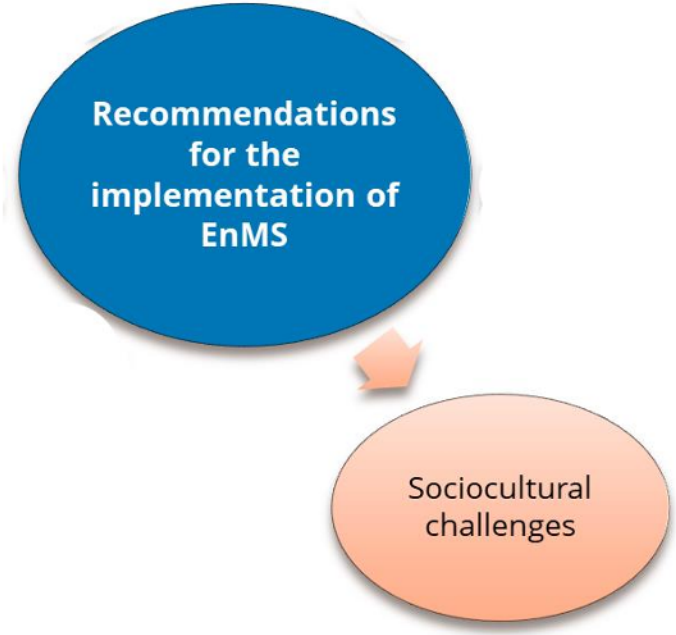


- The equipment replacement by better energy performance appliances
- The oversizing of equipment
- It is necessary to deeply know each process to establish strategies aimed at the efficient use of energy
- Decentralized metering.



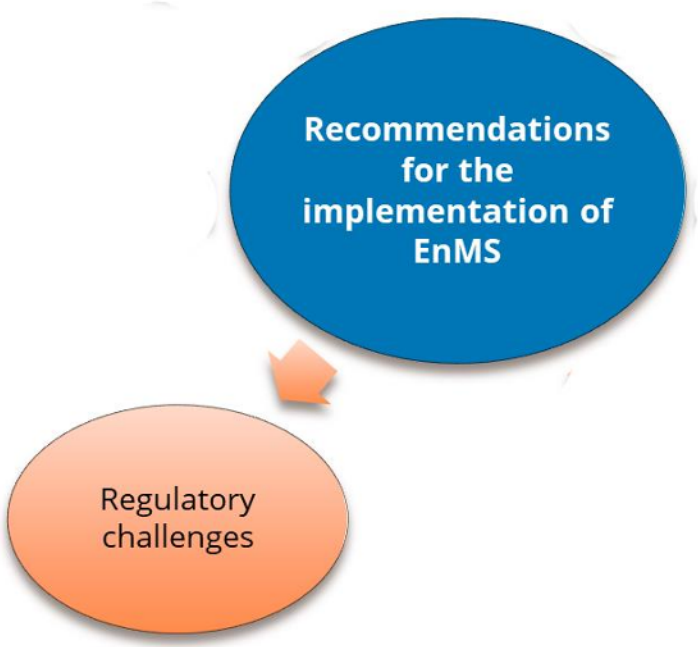
- The vision of the National Energy Plan 2020-2050 points out that the industrial sector should strengthen innovation, training of human personnel, digitization of data, adoption of new technologies, and the replacement of coal generation by clean energy for its production processes



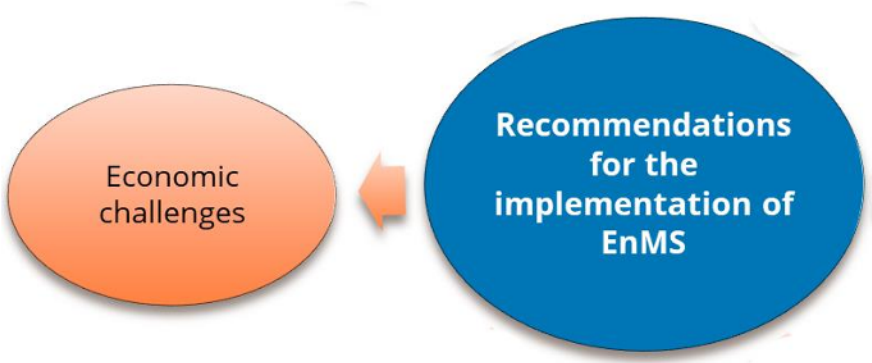
The irrational decisions, beliefs, prejudices, behaviors of some members of the organizations that are against the methodology proposed for the EE improvement in the industry.

Training and qualification of personnel are necessary to positively impact the organization's projects

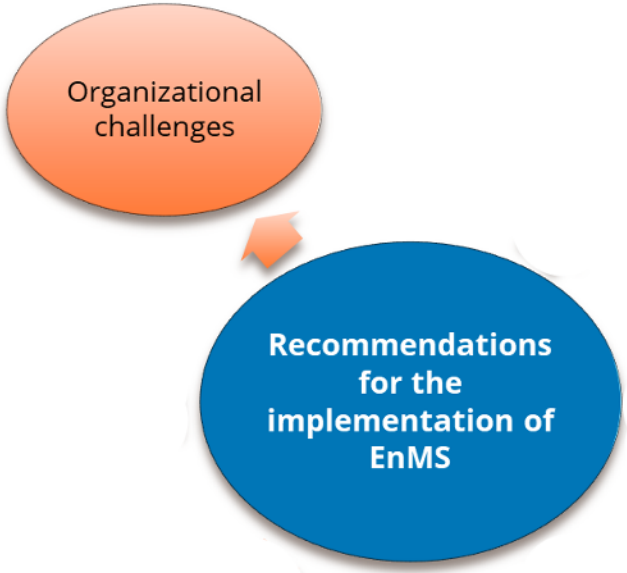
- the creation of a comprehensive regulatory
- the establishment of clear goals in specific time frames
- generate new spaces for the continuously dissemination and exchange of knowledge on good operational practices.



- The investment's long period of return, the scarcity of economic support, the lack of interest of the banking entities, and the perception of high risk in the financial institutions
- The focus of resources on priorities defined by the organization as production quantity and quality diverts the gaze from EE projects



- The administrative leadership will be in charge of defining authorities guarantees so that the planning and execution processes have good endowments of resources, activities, and responsibilities.
- Clear communication channels are necessary for allowing top management to stay informed about the status and risks of the EnMS



V. Concluding Remarks

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- This paper reviewed the alternatives that allow the massification of EE in the industry, focusing on EnMS and evaluating the challenges found in the Colombian paradigm for proposing some recommendations that can make it possible to overcome the challenges identified.

- To fulfill the country's commitments to the SDGs, and in turn promote the massification of the EnMS and EE programs in the country, a state policy is necessary for supporting industries, providing subsidies for the purchase of more efficient equipment and tax incentives that support and encourage companies to be certified in regulations such as ISO 50001.

IV. Concluding Remarks

- It is noteworthy that although the government has encouraged companies to implement energy management programs, the incentives that are currently present are not enough to motivate more companies to invest in these areas.

- Strong awareness of the importance of saving and conscious consumption of energy is necessary for the successful implementation of EnMS because the lack of knowledge of the impacts of EE in the industry is still common in the national context.

Thanks!

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