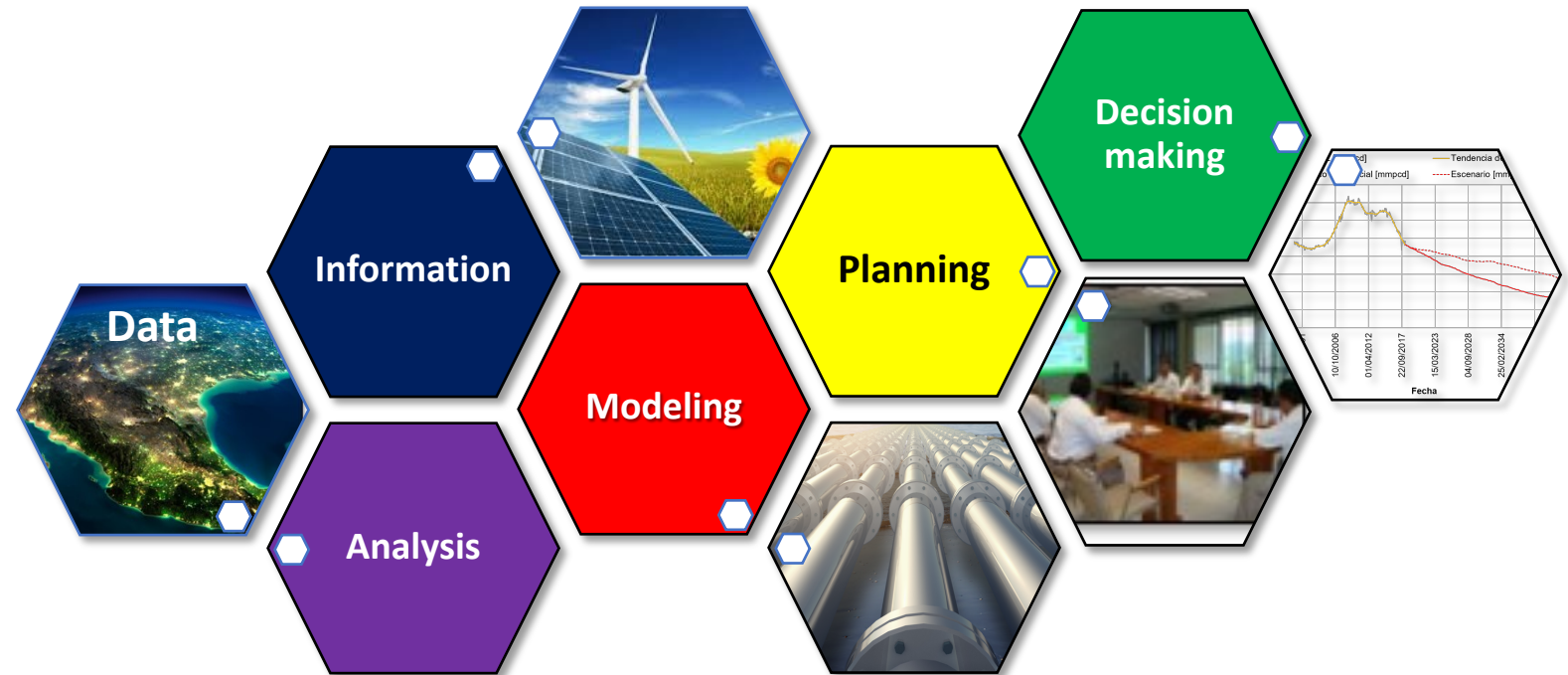# UPE

UNAM

Energy Planning Unit

June 6, 2019

Energy Planning Unit (EPU)

The **EPU** is an interdisciplinary group of professionals who generate tools and knowledge for the **planning** of energy systems with economic, environmental and social goals.

Energy Models developed by the UPE.

With different **state of the art** modeling tools, owned or licensed, the **Energy Planning Unit** of **UNAM** has developed/ applied **energy models** required by entities of the Energy Sector.

Statistical models for electricity demand & quantification of energy resources

Natural Gas Infrastructure model

Macro economics model

Petroleum Chain model

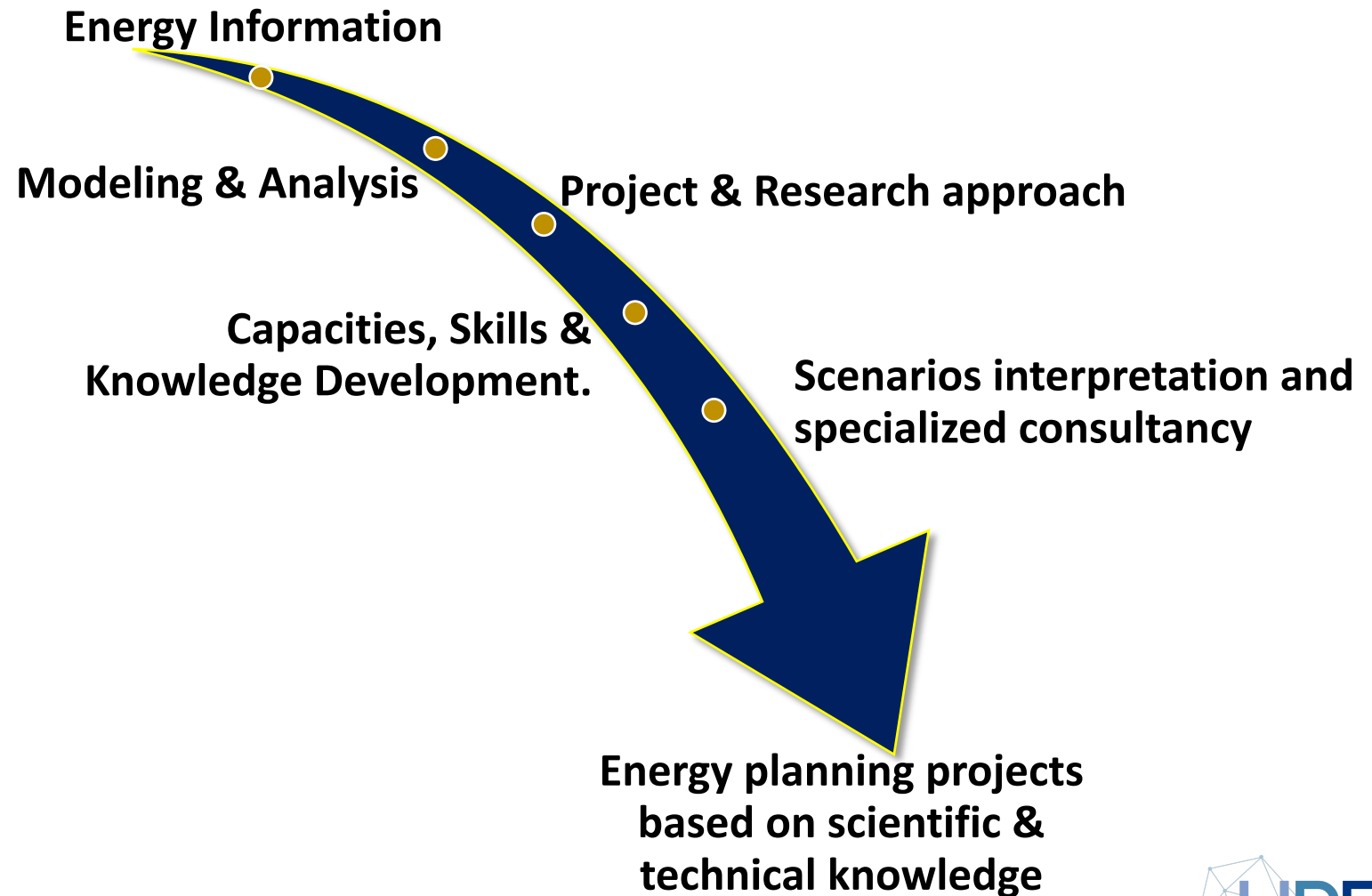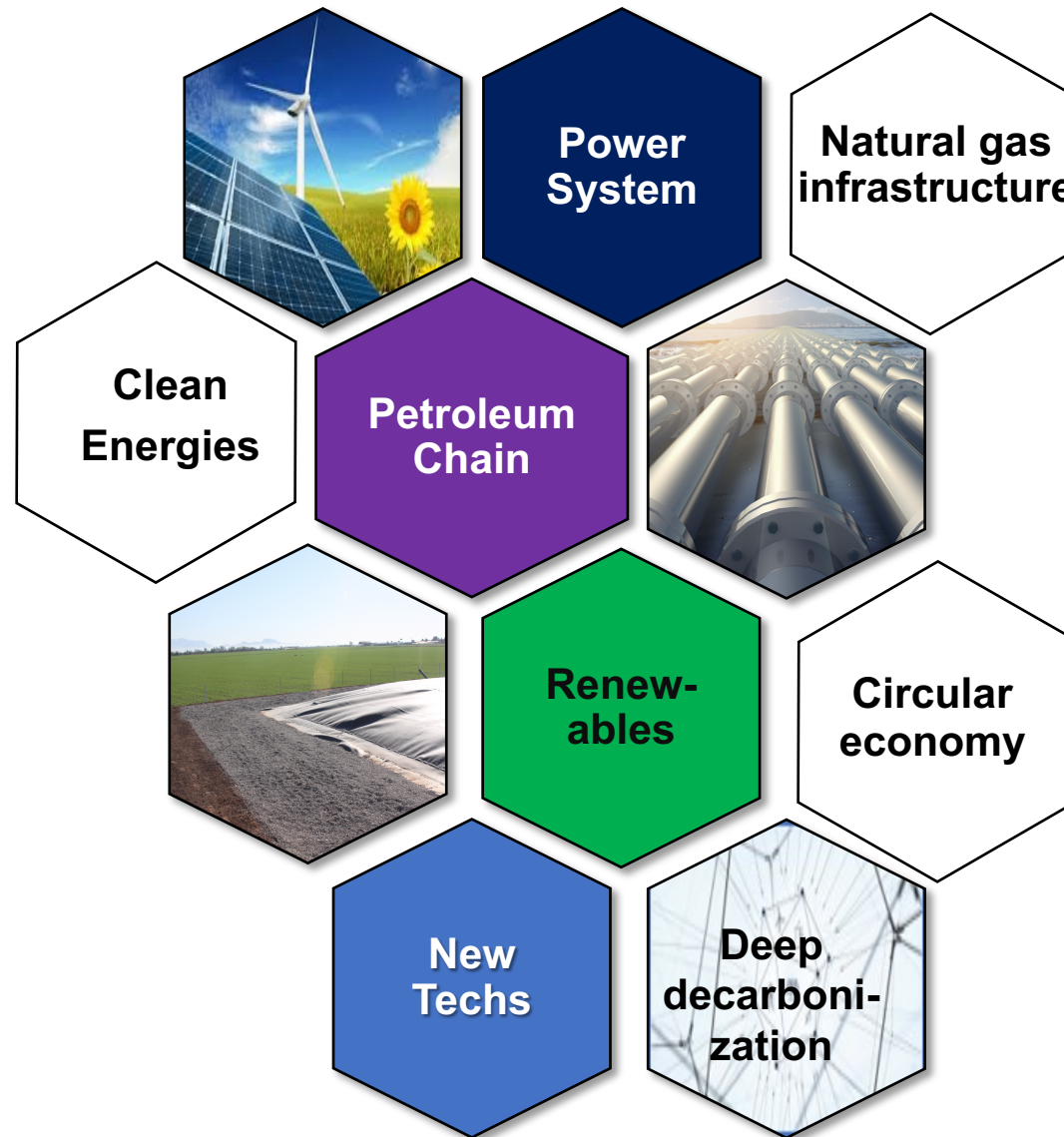**Power System Optimization Model**

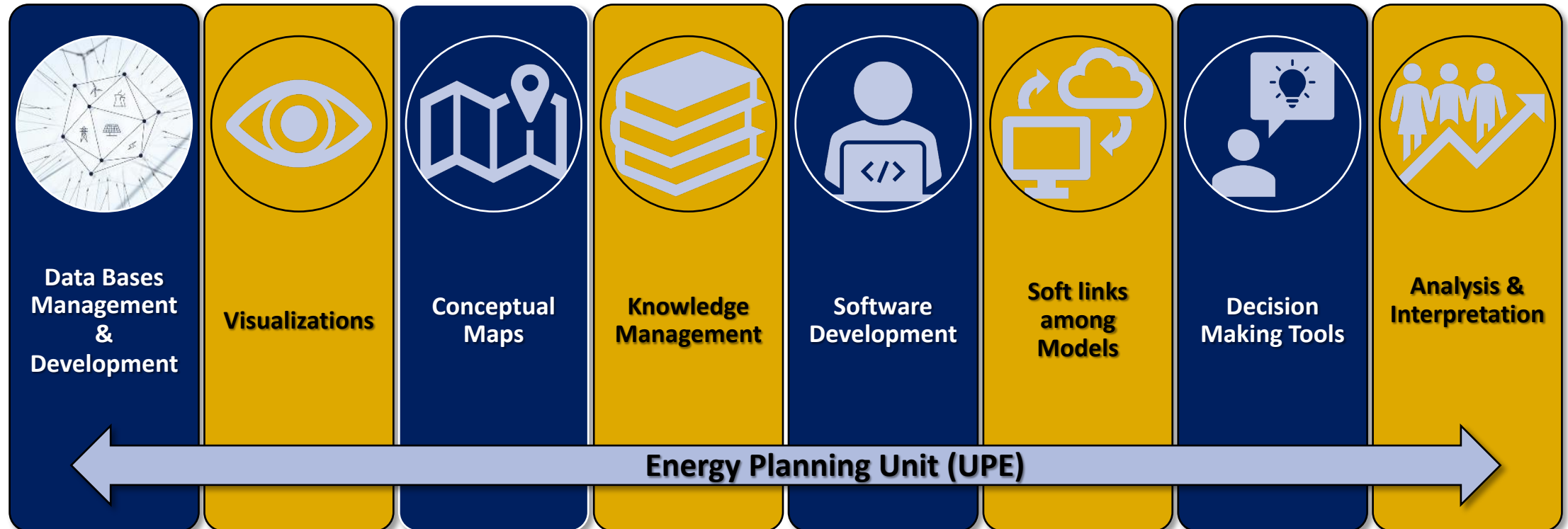
SIMISE

Information & knowledge management

The **Energy Planning Unit's (UPE) information** & **knowledge** management system allows to assertively generate *relevant information and planning schemes* with technical and scientific support.

Energy Information

Modeling & Analysis

Project & Research approach

Capacities, Skills & Knowledge Development.

Scenarios interpretation and specialized consultancy

Energy planning projects based on scientific & technical knowledge

UPE

Areas of interest for the Energy Planning Unit

Power System

Natural gas infrastructure

Clean Energies

Petroleum Chain

Renew- ables

Circular economy

New Techs

Deep decarboni- zation

Transversal tools developed by the Energy Planning Unit

Data Bases Management & Development

Visualizations

Conceptual Maps

Knowledge Management

Software Development

Soft links among Models

Decision Making Tools

Analysis & Interpretation

Energy Planning Unit (UPE)

Areas of interest to the UPE

Sustainable and local handling associated with the integral management of **biomass** and **biogas.**
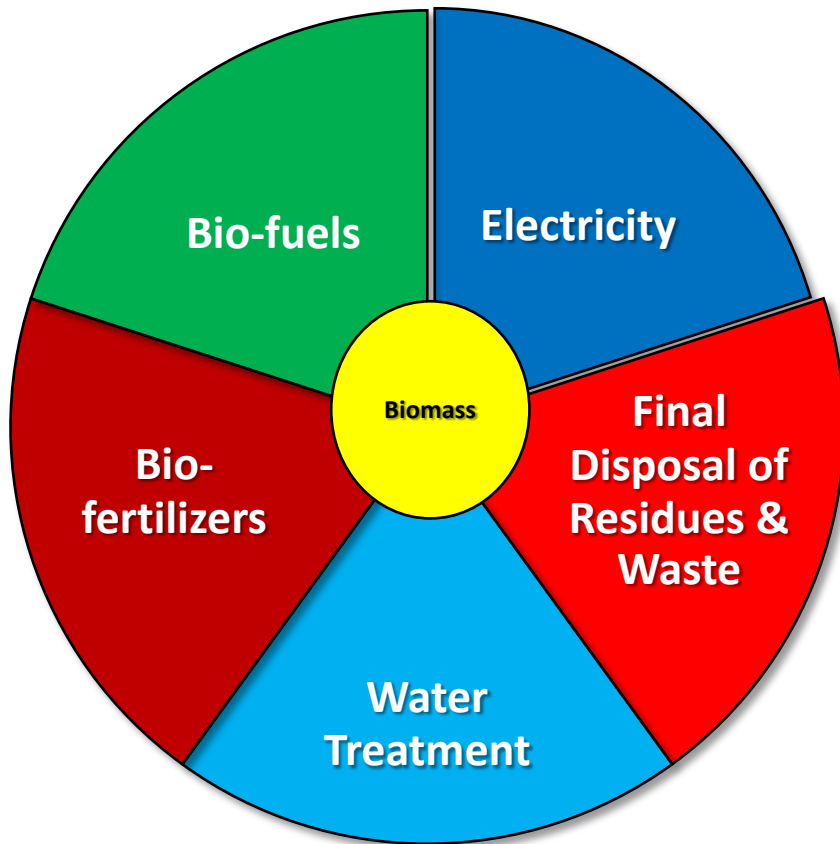
- ❖ Biomass and biogas management processes favor sustainability of distributed generation, self-consumption and organic waste treatment.

- ❖ The energy forms associated with biomass and biogas management include electricity, heat and biofuels.

- ❖ Biomass and biogas plants, with different local management processes, tend to favor the energetic independence of users, encourage environmental and sustainable management of organic wastes, reduce the carbon footprint, reduce costs and increase competitiveness, intensively drive the circular economy.

Biomass areas of interest

Industrial applications in the branches:
Paper. Sugar. Food. Decanter. Traces.

Agricultural applications in:
Dairy farms. Farms for cattle,
pork, chicken, etc.

Municipal applications in:
Plants for the management of solid
urban (organic) waste.
Landfills.
Plants for the generation of electricity
with biogas.
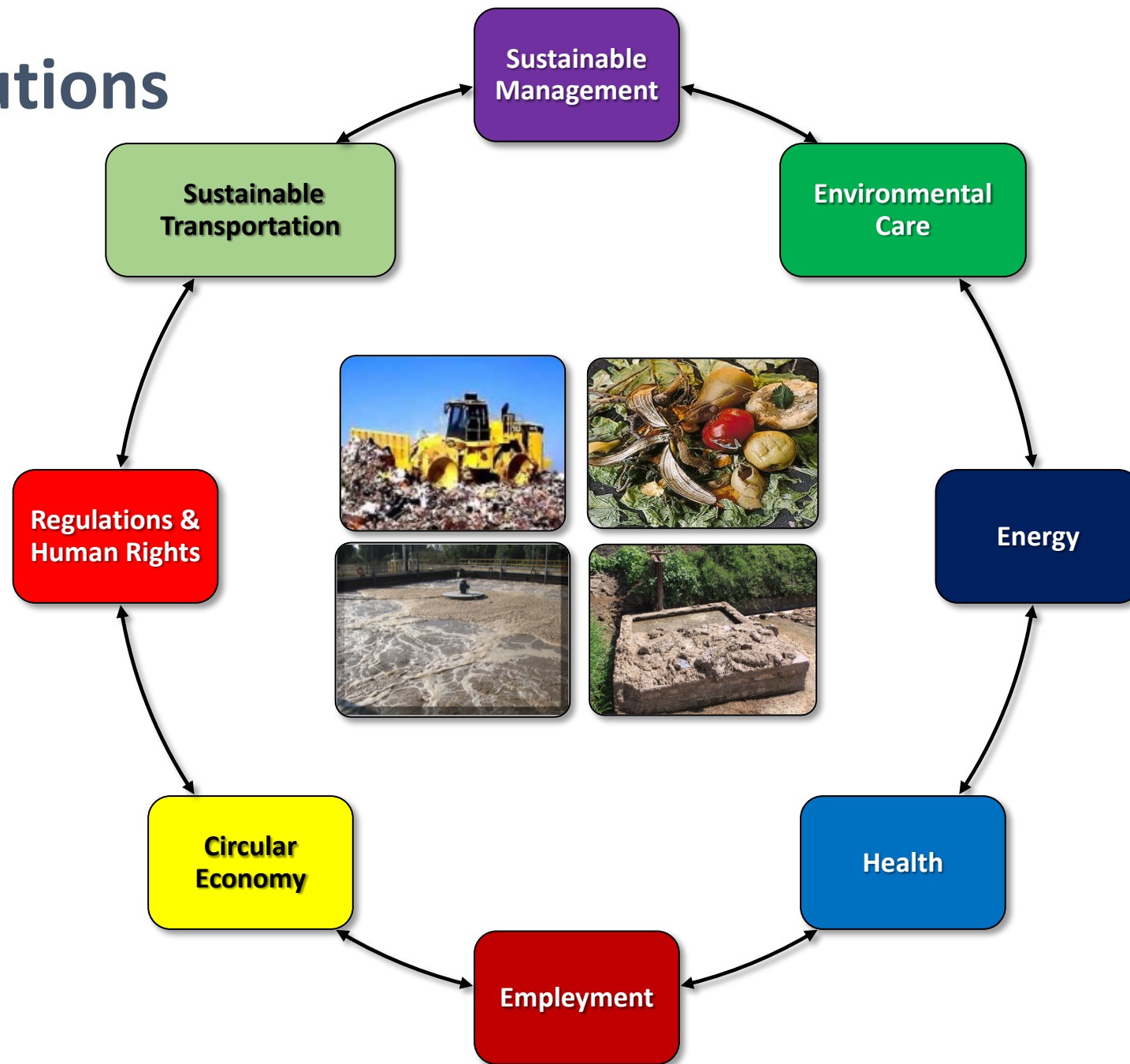Plants for the improvement of biogas

Water treatment in:
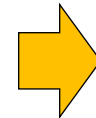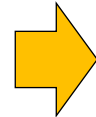Sludge treatment for biogas
production.
Energy efficiency.
Anaerobic treatment.

Integrated solutions

Areas of interest to the UPE.
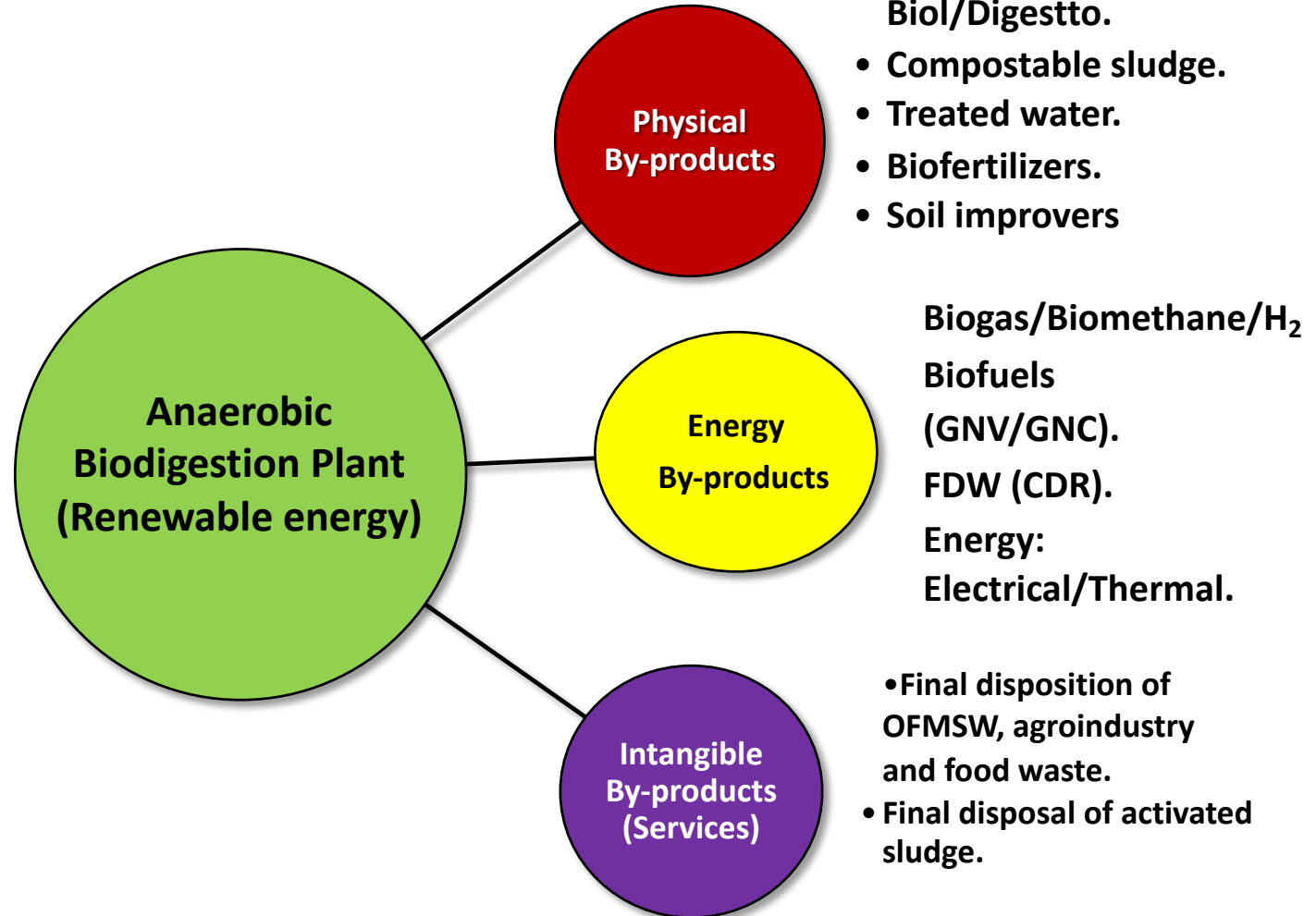
Management for the use of biomass and biogas: main economic vectors:

Physical By-products

Biol/Digestto.
- Compostable sludge.
- Treated water.
- Biofertilizers.
- Soil improvers

Energy By-products

Biogas/Biomethane/H_2
Biofuels (GNV/GNC).
FDW (CDR).
Energy: Electrical/Thermal.

Anaerobic Biodigestion Plant (Renewable energy)

Intangible By-products (Services)

- Final disposition of OFMSW, agroindustry and food waste.
- Final disposal of activated sludge.

Source: AMBB ®

CAPABILITIES OF THE UPE

To contribute to energy planning through the use and development of mathematical-computational, quantitative and qualitative models.

To generate relevant information to help decision making in energy planning.

To offer consulting and audit to the participants of the national energy system.

Education and Training of human resources specialized in planning and modeling of energy systems.

To develop data science for available energy information.

To develop research projects related to the Mexican energy system.

To act as a facilitator of the collaboration with national and international entities dedicated to modeling and energy planning.

Thanks!

Cecilia Martín del Campo Márquez
Directora de la Unidad de Planeación Energética

http://www.upe-unam.com