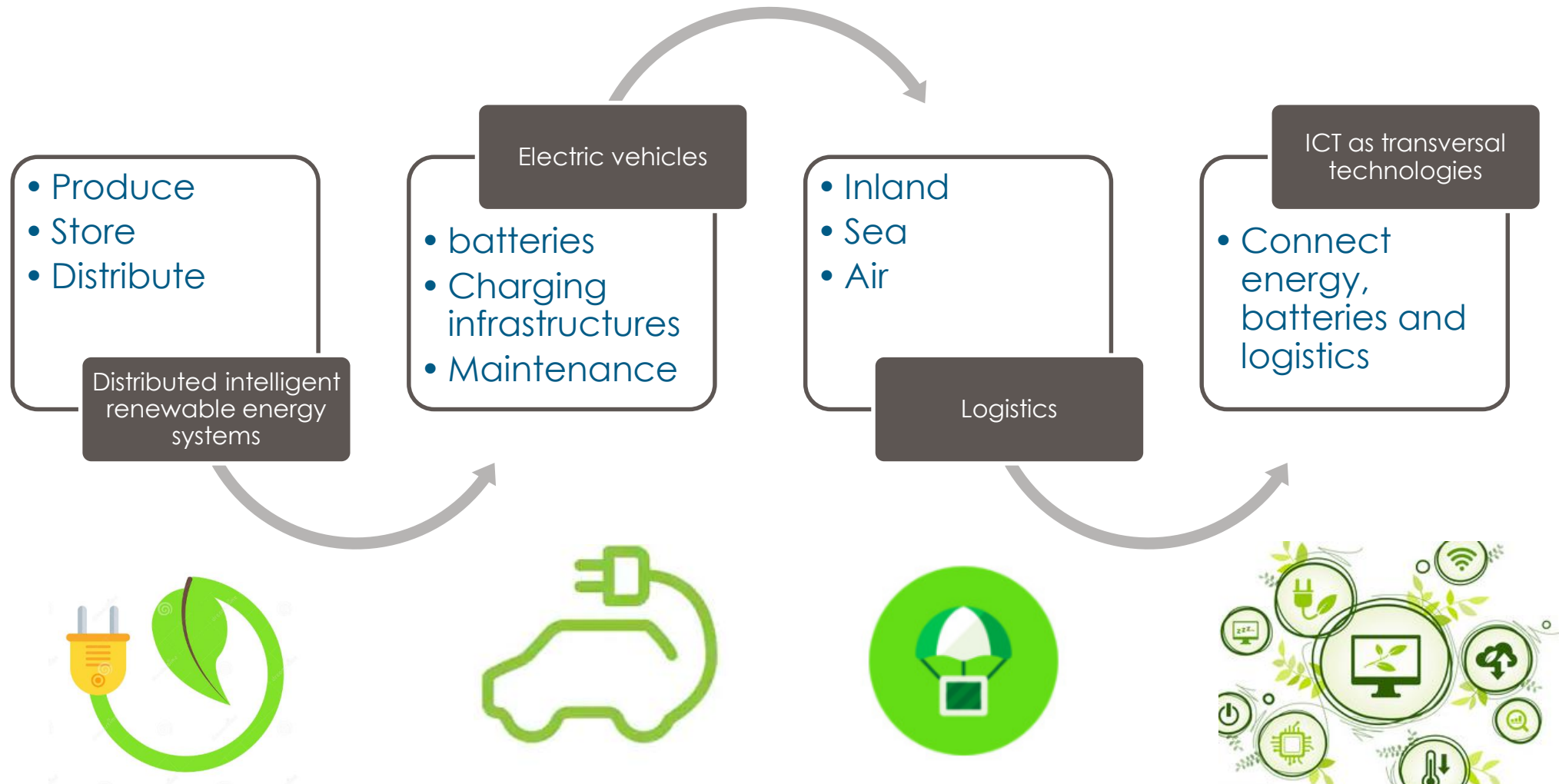


# POINT REVIEW OF INDUSTRIAL TRANSITION OF ANDALUSIA

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## POINT REVIEW OF INDUSTRIAL TRANSITION OF ANDALUSIA: KEY AREAS



## ORIENTATION AND PLANNING

### National Level

#### Central government ministries

Ministry of Industry; Ministry of Economic Affairs and Digital Transformation; Ministry of Consumption; Ministry of Universities; Ministry for Ecological Transformation; Ministry of Science and Technology; Ministry of Education and Professional Training; Ministry of Transport; Ministry of Employment and Social Economy

#### Business sector

General business associations  
(e.g. COEO, CEPYME etc.)

ICT enterp  
(e.g. CONETIC, AMETIC)

Transport enterprises  
(e.g. CETRAA)

Energy sector enterprises  
(e.g. AELEC)

Logistics sector enterprises  
(e.g. ACTE)

#### Parliamentary commissions

e.g. Education; Employment; Science, Innovation etc.

#### Trade unions

CCOO, UGT

**Sectoral Conferences** (e.g. Energy; Transport)

#### Sectorial Commissions

### Autonomous Community Level\*

#### Junta de Andalucía

##### Departments ("Consejerías"):

Employment, training and autonomous work; Taxation, industry and energy; Economy, knowledge, enterprises and universities; Development, Infrastructures and Territorial Planning

##### Economic and Social Council

#### Junta de Andalucía Agencies

Agencia Andaluza del Conocimiento; Agencia Pública Andaluza de Educación (APAE); Agencia Andaluza de la Energía; Agencia de Innovación y Desarrollo de Andalucía – IDEA; Agencia de Obra Pública de la Junta de Andalucía

#### Andalusian Parliament

**Commissions:** Employment, training & autonomous work; Taxation, industry & energy; Economy, knowledge, enterprises & universities; Development, Infrastructures & Territorial Planning

**Working Groups:** Education; Economic reactivation

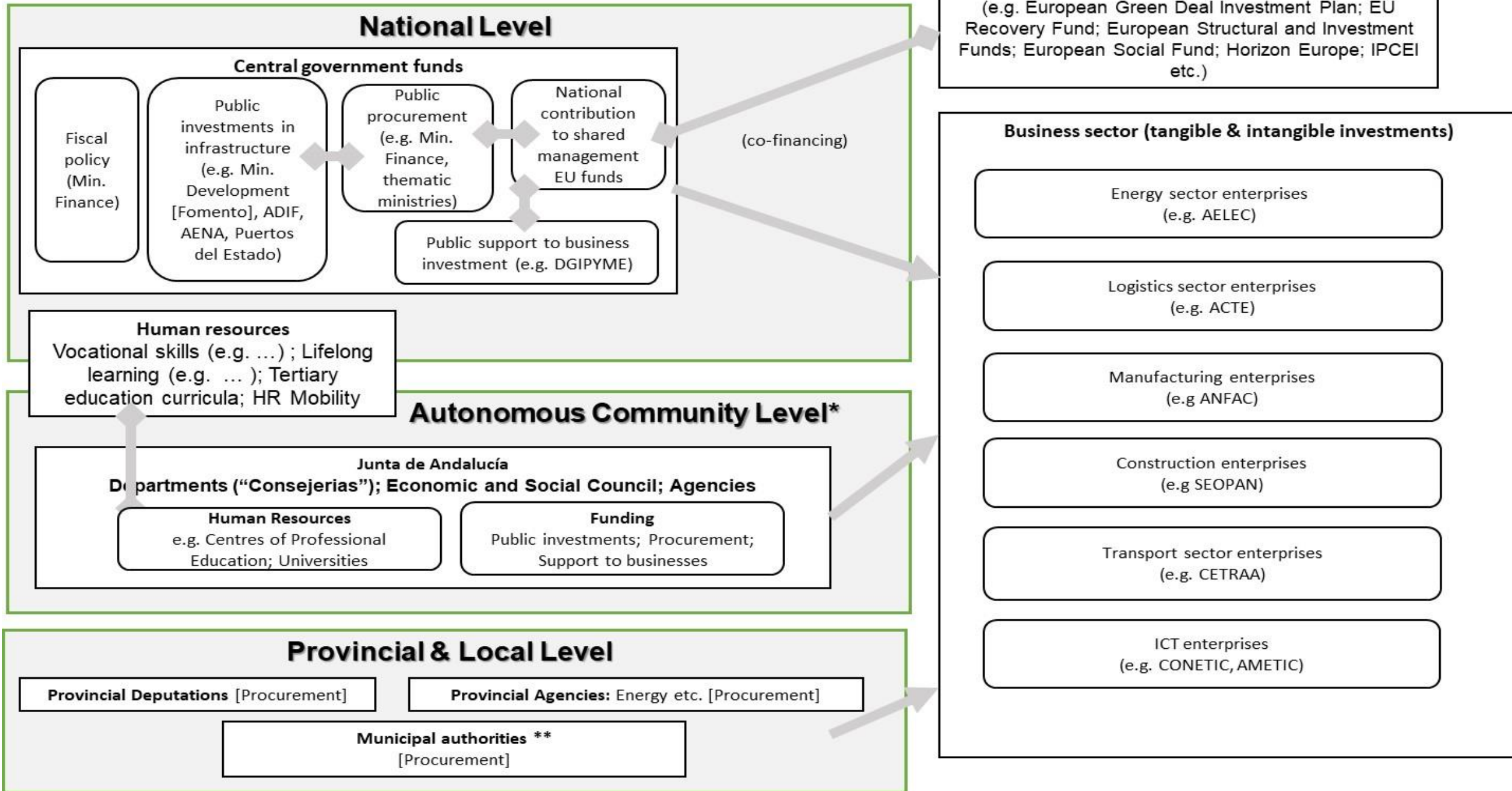
### Provincial & Local Level

Provincial Deputations

Provincial Agencies: Energy etc.

Municipal authorities \*\*

# Resource mobilisation





# Production of goods, services and knowledge

## National producers of goods and services

### ENERGY

**Large businesses:**  
ACCIONA,  
ENDESA,  
IBERDROLA,  
NATURGY  
**Associations:**  
AELEC, UNEF,  
FUTURED, CIDE

### MANUFACTURING

**Large businesses:**  
ACERINOX,  
TECNALIA  
**Associations:**  
ANFAC

### LOGISTICS

**Large businesses:**  
CORREOS,  
SEUR  
**Associations:**  
ACTE

### CONSTRUCTION

**Large businesses:**  
ACS, ACCIONA,  
FCC, FERROVIAL,  
SACYR  
**Associations:**  
ACTE

### ICTs

**Large businesses:**  
TELEFONICA,  
INDRA,  
MASMOVIL  
**Associations:**  
CONETIC,  
AMETIC,  
Plataforma  
enerTIC

### TRANSPORT

**Large businesses:**  
TORROT,  
NAVANTIA  
**Associations:**  
CETRAA

### Cross-sectoral bodies

Confederation of Employers and Industries of Spain (CEOE), Confederation of SMEs (CEPYME), Spanish Association of Automobile Equipment (SERNAUTO), ...

## Foreign Direct Investment

**Energy:** TOTAL

**Manufacturing, transport and logistics:**  
AIRBUS, DEKRA, GRUPO PSA, NISSAN  
IBERIA, RENAULT GROUP, SIEMENS,  
ETC.

**ICTs:** ORANGE, AMADEUS, VODAFONE,  
SAMSUNG, IBM, ACCENTURE,  
ESPRINET

## Knowledge producers

### Public research organisations

Spanish National Research Council (CSIC), National Centre for Renewable Energy (CENER), Research Centre for Energy, Environment and Technology (CIEMAT), Geological Survey of Spain (IGME)

Spanish Institute of Oceanography (IEO)  
National Institute of Aerospace Technology (INTA), Advanced Aerospace Technology Centre (CATEC)

### Universities

College of Industrial Engineers (COIIAOC), University of Almeria, University of Cadiz, University of Cordoba, University of Jaen, University of Granada, University of Huelva, University of Malaga (Domotics and Energy Efficiency Institute), University Pablo Olavide, University of Seville (Engineering School, Architecture School)

## Regional producers

### ENERGY

**Large businesses:**  
ABENGOA,  
HESTECC,  
MAGTEL, PRODIEL  
**SMEs & Start-ups:**  
GPTECH, H2B2,  
INGENIERIA DEL SOL  
**Associations:**  
CLANER, APADGE,  
A3E

### MANUFACTURING

**Large businesses:**  
AYESA, EZENTIS,  
INERCO

### LOGISTICS, TRANSPORT & CONSTRUCTION

**Large businesses:**  
J. CARRION, VALEO ILUMINACION, ALESTIS  
AEROSPACE  
**SMEs & Start-ups:**  
HURTAN, PASSION MOTORBIKE FACTORY  
**Associations:**  
ACTE, FLC (Labour Foundation of Construction), FAECTA

### ICTs

**SMEs & Start-ups:**  
ISOTROL, Wellness  
TechGroup, EC2CE  
**Associations:**  
Technological Corporation of Andalusia (CTA), Digital Cluster Association (ETICOM)

### Cross-sectoral bodies

Confederation of Entrepreneurs of Andalusia (CEA), Andalusian Cooperatives Association (FAECTA), UPTA Andalusia (Self-Employed Workers Union)

# Consumption or Use

## Andalusian exports

**MINERAL OILS  
AND FUEL**  
4.582bn EUR  
(2019)

**AIRCRAFT AND  
AEROSPACE**  
2.499bn EUR  
(2019)

**METALIC ORES,  
SLAG AND ASH**  
1.84bn EUR  
(2019)

**ELECTRICAL  
EQUIPEMENT  
AND MATERIAL**  
1.565bn EUR  
(2019)

**COPPER AND  
ITS ARTICLES**  
1.147bn EUR  
(2019)

**CAST IRON,  
IRON AND  
STEEL**  
1.08bn EUR  
(2019)

## National markets

**HOUSEHOLDS**  
ENERGY EXPENDITURE (975 EUR PER  
HOUSEHOLD, 2019), TRANSPORT  
EXPENDITURE (3,888 EUR PER  
HOUSEHOLD, 2019)  
SERVICES (INCL. FINANCE)

**PUBLIC SECTOR**  
CITY COUNCILS, COUNTY COUNCILS,  
AUTONOMOUS COMM. GOVNTMS,  
NATIONAL GOVERNMENT

**BUSINESSES**  
ENERGY EXPENDITURE AND  
INVESTMENT;  
TRANSPORT EXPENDITURE AND  
INVESTMENT;  
B2B SERVICES

## Regional markets and users

**HOUSEHOLDS**  
ENERGY EXPENDITURE (876 EUR PER  
HOUSEHOLD, 2019), TRANSPORT  
EXPENDITURE (3,789 EUR PER  
HOUSEHOLD, 2018), SERVICES (INCL.  
FINANCE)

**PUBLIC SECTOR**  
CITY COUNCILS  
COUNTY COUNCILS  
JUNTA DE ANDALUCIA

**BUSINESSES**  
ENERGY EXPENDITURE AND  
INVESTMENT;  
TRANSPORT EXPENDITURE AND  
INVESTMENT;  
B2B SERVICES

## Local niches

**CITIES**  
APARTMENT BLOCK PVS,  
MICROGRIDS, COMMUNITY  
STORAGE, MICROMOBILITY, LAST-  
MILE DELIVERY, PARKING/EV  
CHARGING, E-BUSES, METRO AND  
TRAMWAY; BLOCKCHAIN

**INTERCITY  
TRANSPORT**  
ELECTRIC  
TRAINS,  
FREIGHT,  
PASSENGER  
SERVICES

**AIR TRANSPORT**  
AIR TRAVEL,  
SECURITY,  
HYDROGEN  
PLANES

**COASTAL**  
OFFSHORE  
RES: WIND,  
FLOATING PV;  
HYDROGEN;  
E-FERRIES

**COUNTRYSIDE**  
RES: PV, WIND, GEOTH.,  
HYDRO; THERMAL SOLAR;  
STORAGE: PUMPED HYDRO;  
BATTERIES;HYDROGEN;  
BATTERY RE-USE &  
RECYCLING

## Lead adopters and prosumers

**PROSUMERS**  
MICROMOBILITY  
USERS  
RIDESHARING  
USERS  
EV OWNERS/USERS,  
ROOFTOP SOLAR  
HOUSEHOLDS  
(SELF-  
CONSUMPTION)

**ENERGY  
COMMUNITIES**  
SOMENERGIA  
ECONACTIVA  
ENERGETICA COOP  
GOIENER  
LA CORRIENTE  
NOSA ENERXIA  
SENEC  
SOLABRIA

**USER  
ASSOCIATIONS**  
ENERCLUB (Energy  
Education NGO);  
AUVE (Assctn of EV  
Users); AMPES  
(Asscn of Ecological  
Mobility of Seville)

## Information and interest brokers

**CONSUMER  
ASSOCIATIONS**  
AEGE (Assctn of  
Businesses with  
Large Energy  
Consumption)  
FACUA (Federation  
of Consumers and  
Users of Andalusia)

**KEY USER  
INFORMATION  
NODES**  
EVs: DEALERSHIPS,  
REPAIRERS.  
ENERGY: LOCAL  
UTILITY OFFICES  
TRANSPORT

**SPECIALISED PRESS  
& ONLINE  
CHANNELS**  
AUTOBILD  
REVISTACAR  
FOROEV.COM  
MOVILIDADELECTR  
ICA.COM



## POTENTIAL RECOMMENDATIONS

- Support key agencies for transformative change
  - Especially through public procurement
- Address resistance to change
  - Accompanying old professions towards transition (e.g. vehicle maintenance) to avoid resistance to change: importance of vocational training / innovation capabilities
- Develop clusters as loci of experimentations
  - E.g. through regulatory sandboxes, for instance for Hydrogen
- Drawing on community-driven entrepreneurship
  - E.g. by financing (through local crowdlending initiatives, e.g. creating a transition crowdlending platform)
- Develop broad coalitions
  - to foster deliberative governance in a whole-of-government mobilization