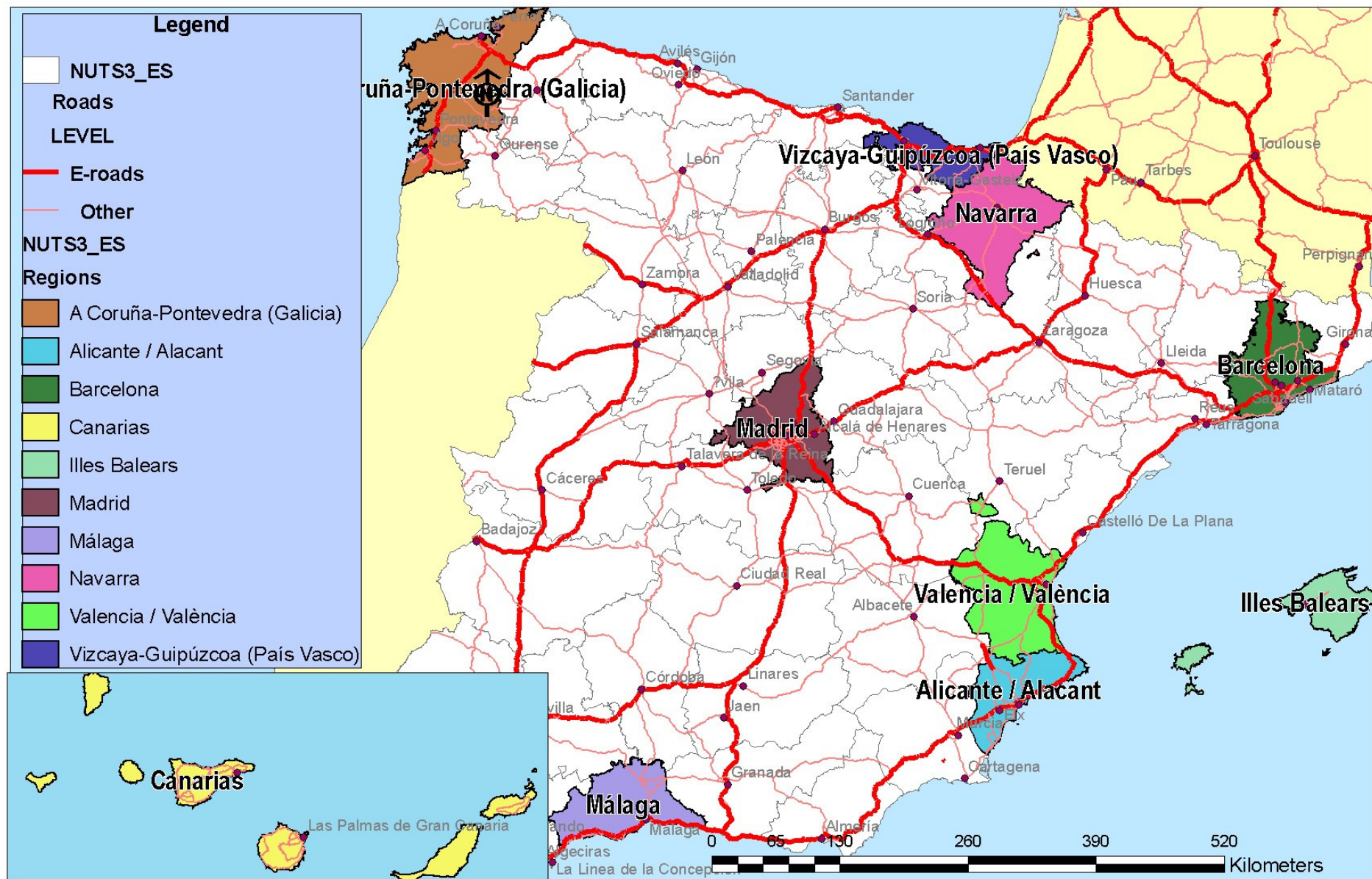


## Infrastructure Build-Up: Manual Detection of Early User Centres (~2015)

Please use the below table to determine, possibly under consultation of the stakeholders, **2-5 areas** you consider as first user centres (ideally covering **about 10-25%** in total **of the country's population**). Please base each choice on **one or more** of the **given additional indicators** and give a **detailed comment**. If an indicator which influenced your decision accounts for more than the selected regions, please comment why you chose this region and not one of the others (e.g. if expert communities exist in A-city and B-city, why did you choose A-city and not B-city?). For an explanation of the indicators, please view the document "**Strategy for identification of promising regions and demand allocation**". You are free to specify additional indicators you consider important or additional areas not yet included in the list.

The demographic indicators of population density, cars per person and purchasing power are provided as decision aid. Consent on the detected early user centres will be searched at the 2<sup>nd</sup> /5<sup>th</sup> MS Workshop.

The below map graphically shows the **preselected regions** (see table next side) from which to choose the early user centres.



Region Demographic Data							Additional Indicators										Early User Centre (Please select 2-5)	Detailed Comment			
NUTS3 code	Region name	Population (% of country)	Population Density (Inhabitants/sqm)	Cars per Person	Purchasing Power (€/person,year)	Cars per Household	Local Pollution	Second cars	Size of cars	Stationary use	Availability of experts	Demo-Projects	Hydrogen production portfolio	Customer base	Political commitment of regions	Stakeholder Consensus			Additional indicator 1 tourism	Additional indicator 2	
ES300	Madrid	13.59%	698	0.53	>13,000	1.63	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
ES511	Barcelona	12.00%	642	0.45	12,000 - 12,999	1.34	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
ES523	Valencia / València	5.47%	211	0.45	11,000 - 11,999	1.38	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
ES521	Alicante / Alacant	3.90%	275	0.45	10,000 - 10,999	1.34	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
ES617	Málaga	3.25%	183	0.38	9,000 - 9,999	1.22	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
ES530	Illes Balears	2.25%	186	0.61	>13,000	1.82	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
ES220	Navarra	1.35%	54	0.45	>13,000	1.44	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Aggl	Vizcaya-Guipúzcoa (País Vasco)	4.19%	410	0.42	>13,000	1.29	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Aggl	A Coruña-Pontevedra (Galicia)	4.75%	157	0.45	9,000 - 10,000	1.52	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Aggl	Canarias	4.47%	252	0.46	10,000 - 11,000	1.53	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Additional Region Zaragoza						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
	Additional Region						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Additional Region						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

## Additional comments:

Choice of Madrid: we have chosen Madrid for different reasons: first of all, it is the Spanish capital, with a large budget to do demonstration projects and to develop the needed infrastructure. It has a demonstration project of buses with fuel cells with a Hydrogen fuel station. The purchasing power is high, and there is an important problem with the traffic and the pollution of the air (some political actions are planning to limit the traffic in the town centre). A lot of households have second cars (even third cars), and the size of these cars tends to be not very big. A lot of research centres are working in hydrogen in Madrid (CIEMAT, INTA, Gamesa, CIDAUT, CSIC), etc.

Choice of Barcelona: the reasons to choose Barcelona are similar to those of Madrid (pollution, number of cars, second cars, population, purchasing power). It has the demonstration project of buses with fuel cells, so there is a Hydrogen fuel station. Near Barcelona, in Tarragona, there is an important industrial area, where we can find Hydrogen by-product and the most important suppliers of hydrogen in Spain, Carburos Metalicos and AirLiquide, have factories there. It is one of the entrances of Natural Gas in Spain, and the enterprise "Gas Natural SDG, S:A:" has its headquarters in Barcelona. The A-7 highway is one of the most important roads to tourism entrance. An early infrastructure will have to be developed to supply hydrogen to tourists' hydrogen cars.

Choice of Valencia: due to its population, the number of cars per household, the pollution of the air because of the traffic, the purchasing power, etc, Valencia seems to be a potential centre. In all this region, the Comunidad Valencia (Valencia, Alicante and Castellon, but above all, Valencia and Alicante), the tourism is very important so, like in Barcelona, an infrastructure for tourists' hydrogen cars will have to be developed. The construction sector is very important to the economy, and there are a lot of new constructions of housing that can represent niches of market for the stationary use of hydrogen. There is availability of experts, like ITE, NTDA, Siliken, etc.

Choice of Navarra: the purchasing power in Navarra is one of the highest in Spain. There is a lot of available wind power. There is a strong political commitment to do projects and to develop the hydrogen in Navarra. Some of the most important stakeholders are there: CENER, Acciona, Gamesa. Roads in Navarra are other entrances for tourism in Spain.

Choice of Zaragoza: although the population of Zaragoza (912,072 inhabitants, 2.06%) is not very high and the number of cars is not a problem (527 vehicles/1000 inhabitants), the purchasing power is high (12,999€/person.year). The political commitment to develop the hydrogen economy is very strong, so the stakeholders think Zaragoza is a potential early user centre. There are a lot of experts there, like LITEC-CSIC and the Hydrogen Association of Aragon. In all the region, Aragon, there are 1154MW of installed wind power, that can be used to produce hydrogen by electrolysis. There are also available coal reserves, that can be used if coal gasification is used to produce hydrogen. By-product Hydrogen could be available in this region.

There were no doubts to choose Madrid, Barcelona and Navarra, supported by the stakeholders consensus. Why have we chosen Zaragoza and not País Vasco? The population of País Vasco is larger than the population of Zaragoza, and the purchasing power too. But the reason to choose Zaragoza and not País Vasco is the political commitment (stronger in Zaragoza). In País Vasco the industry is very important, and there are hydrogen by-product, but we don't know any political initiative to promote the use of Hydrogen. Galicia is the first wind power producer in Spain, so it could be expected a big production of hydrogen by electrolysis, but there are not any centre researching in hydrogen there, so it seems that this region is not very interested in hydrogen at the moment.