

A decorative graphic consisting of a horizontal bar with rounded ends, divided into four segments of different colors: dark blue, teal, green, and light green. The bar is positioned across the middle of the page, with the title text centered within it. Below the bar, there are four large circles in the same color sequence as the segments above, arranged in a row. The circles are partially overlapping and extend towards the right edge of the page.

Capacity-building needs assessment in coal⁺ regions and programme concept

March 2022



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I. Executive Summary

The aim of the CINTRAN project is to understand the patterns and dynamics derived from the decarbonisation of carbon-intensive regions in Europe and enable pro-active participation of key regional actors to contribute a successful just transition. To achieve such a goal, it is indispensable to get a first-hand perspective of which knowledge gaps different stakeholders have, with an aim towards building their capacities to drive their own regional transformations.

An assessment of regions' varying needs was based on interviews with diverse practitioners¹ in thirteen European countries. Their personal perspectives have revealed definite knowledge gaps overall, some of it relatively unsurprising and others somewhat eye-opening. Generally speaking, actors in the regions wish to understand better especially socio-economic aspects to the just transition, such as *economic diversification* and *re-skilling workers*. They see distinct opportunities for region-wide switches from fossil-fuel dependence towards the sustainability and resilience to be found in *renewables*, *efficiency*, etc., but also some concerns of how to drive it forward in a financial sense, in particular by *attracting investments* and applying *innovative funding* approaches. At the same time, all stakeholders seem to understand that steps need to be taken in on-boarding other stakeholders, whether *systemic engagement across sectors and governance levels* or still *convincing certain actors/communities about the need for a just transition* at all.

There are also some nuanced differences between stakeholder groups and countries, including several aspects that clearly align well with stereotypical agendas of such groups. Public authorities seem to be more interested than other groups in learning about *environmental rehabilitation*, *aligning strategies* (focused on *territorial just transition plans* or other related fields), *community cohesion* and *demographic changes*. Meanwhile, civil society and trade unions appear to have distinct interest in issues like *public participation and community activism*, while energy/development agencies' top priorities largely mirror the same ones found overall, though actually slightly favouring *other energy measures/technologies* over the more generally popular *renewables*.

Although there were definite overlaps in capacity-building needs between countries, they also exhibit their own differences. For example, from among CINTRAN's four target regions: Ida-Viruumaa, Estonia, (the only non-coal region of the four, with oil shale instead) has the highest interest in learning more about various societal facets (e.g. *gender* and *social challenges*) to the transition; Upper Silesia, Poland, seems to most highly prioritise *environmental rehabilitation*; the Rhenish Revier, Germany, is especially keen to improve *stakeholder partnerships* and has a distinct ambition towards *alternative energy*, including *hydrogen*; and Western Macedonia seems the most concerned about *mine closures* and has the strongest interest in learning more about potentially positive roles of *agriculture* or *tourism* to facilitate in the transition.

¹ It is also worth emphasising that their very appreciated insights come from their own individual experience, and do not necessarily reflect any official standpoint of their respective organisations

1. Introduction

The energy transition and a sustainable transformation of carbon-intensive regions is closely aligned with the European Green Deal and the EU's goal of becoming carbon-neutral by 2050. The H2020-funded project **CINTRAN** (Carbon INTensive regions in TRANsition) has been explicitly designed with these initiatives in mind. By seeking to unravel the challenges of structural change in the context of the diverse needs and concerns of various actors in these regions, the project dovetails with the guiding principle of the Just Transition Mechanism, that a fair transition should leave no one behind.

CINTRAN recognises that regions economically dependent on fossil fuel extraction and/or energy-intensive industries will be disproportionately affected by the decarbonisation of their respective country's industry and the economy. Project partners are carefully studying the complex patterns and dynamics of structural change in carbon-intensive regions across Europe. The project examines the pace of transformation and the regions' capacity to cope and adapt proactively through highly integrated, inter- and transdisciplinary research working in close collaboration with regional stakeholders from four highly fossil-fuel dependent regions: Ida-Virumaa (Estonia), Upper Silesia (Poland), the Rhenish Revier (Germany) and Western Macedonia (Greece).

A core component of CINTRAN's work is the development and eventual implementation of a tailored capacity-building programme to benefit its four target regions and those under similar circumstances across Europe, and possibly even beyond. This programme, based on an in-depth assessment of existing needs from regional stakeholders, aims to share and multiply knowledge coming out of other CINTRAN activities and related initiatives to inform a more effective, just and inclusive governance of regional transformations.

2. Objectives

The main purpose of this document is to outline CINTRAN's proposed concept for its capacity-building programme, as a foundation for implementing that same programme in practice. At a deeper level this concept also seeks to explain and justify why the programme has been shaped in the way described, primarily based on the needs assessment which was conducted. The needs assessment itself investigated current and foreseeable capacity-building resources and needs, and to try to correlate this information with further insights contributed from different key stakeholder groups. In the end, this document seeks to identify viable formats and topics to be covered in the project's planned set of e-seminars and in-person events, which can collectively be called the CINTRAN "Regions in Transition" Academy Event Series.

Throughout this document, we will alternatively use the term "coal+" or sometimes just simply "coal", but both are meant to be largely interchangeable. In the CINTRAN context, most cases are truly meant to refer to a type of coal (i.e. lignite, bituminous or anthracite coal), especially where it is mined. The reason to apply a "+" is that some instances may actually signify a wider definition encompassing other solid fossil fuels extracted in Europe, namely oil shale and peat, and/or the use of any of them (e.g. in power production or certain industries). This distinction can be important, because many issues relevant to coal are actually often applicable to other types of fossil fuels or how any of them are used, including in a capacity-building context of fostering and accelerating a just transition.

This document should be of interest to both researchers and practitioners, in particular from public authorities, in the field of coal+ transitions. Researchers might find it useful to gain a sense of methods and results to expand and/or improve upon. Meanwhile, practitioners might be particularly curious to explore the results to compare to their own regional perspectives, but also might be inspired to conduct a similar assessment amongst local stakeholders in order to investigate needs for their own region. Finally, since this process is done within the context of an upcoming capacity-building programme, the hope is that representatives from both groups will be eager to participate, whether simply to learn (and be inspired to act!) or to contribute by sharing their own experiences.²

² Interested in learning more, participating and/or contributing to our activities? Then please visit www.cintran.eu subscribe to the CINTRAN newsletter, join us on social media (Twitter, LinkedIn and ResearchGate) and/or contact us directly: info@cintran.eu.

3. Methodology

3.1. Desk review

The development of this concept begins with the needs assessment as its core element. In order to initiate the process well, the ICLEI Europe team initiated a desk review of existing resources to shed light on both known capacity-building needs and potential opportunities to build on them. Main sources of information primarily included a review of websites, together with their published materials and past/upcoming capacity-building events, especially from the EU's [Initiative for coal regions in transition \(CRiT\)](#) and other known platforms and experts (e.g. [Agora Energiewende](#), [CoalTransitions.org](#), [E3G](#), [Europe Beyond Coal](#) and [Powering Past Coal Alliance](#)), as well as projects highly related to CINTRAN (i.e. [DeCarb Interreg](#), [ENTRANCES](#), [TIPPING+](#) and [TRACER](#)). Additionally, separate dedicated discussions with the coordinators of the TRACER project (from WIP Renewable Energies) and the [Coal Regions Learning Academy \(CRLA\)](#), from the College of Europe in Natolin and the World Bank) about their own respective coal-related capacity-building activities helped to refine knowledge further.

This initial desk review helped to identify a list of broad stakeholder groups - Public Authorities, Civil Society, Agencies, Private and Other - and sub-groups likely interested in coal⁺-related capacity-building activities, such as CINTRAN's envisioned programme. Furthermore, the ICLEI team developed an extensive list of commonly-cited issues of concern to the coal⁺ transition community, which was also sorted into a few broader categories - Economic, Social, Infrastructure, Energy, Environmental and Technical Assistance (with the latter including broader practical skillsets such as strategy development, stakeholder engagement, financing, etc.). This mapping exercise was done in order to better understand which actors have capacity-building needs and which relevant issues, from the level of thematic areas down to very specific subtopics, might be worth further exploration.

3.2. Initial confirmation

ICLEI's team then narrowed down both lists in order to confirm with other CINTRAN partners that it was on the right track. This was done in two interactive sessions (using a Miro board), first primarily including regional partners from CINTRAN's four target regions, secondly with other technical experts (focused more on the final two steps only). The first step meant to ensure that all key stakeholders had been identified, and similarly in the second step that all key topics had been included, as well as a follow-up step (see *Figure 1*) to make an initial estimate of which of the capacity-building topics might be most important (or even most urgent) for CINTRAN's upcoming programme to address, but also which topics might be most broadly needed (meaning relevant for more stakeholder groups). Thereafter two final steps focused on somewhat more practical matters, namely to determine which of these topics might align well with the project's own activities, as well as additional opportunities potentially in sync with our partners' own other activities and those of other known experts beyond CINTRAN's consortium. These sessions proved very useful, not only for identifying gaps among stakeholders (including some potential individual interviewees) and topics, but also providing valuable guidance for the rest of the needs assessment.

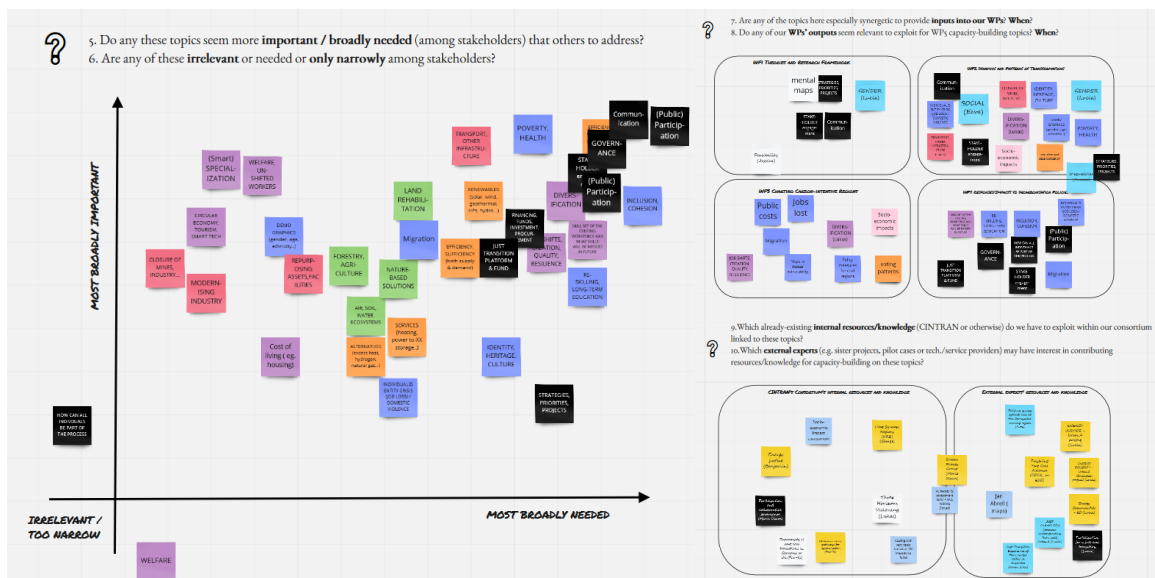


Figure 1. Working draft (on a Miro board), from interactive sessions with CINTRAN partners, with initial assessments of potential topics' importance vs. broad need (L) and their potential alignment both with project WPs and known opportunities within and outside CINTRAN consortium (R).

3.3. Needs assessment process

The above topics were subsequently re-phrased, re-sorted or even in some cases removed in an attempt to streamline the upcoming needs assessment. Ultimately a set of 26 topics were identified as worth analysing among selected stakeholders, grouped into the following seven categories with varying numbers of subtopics each:

- 3 (Socio-) Economic;
- 4 Societal;
- 5 on Infrastructure and Energy;
- 2 Environmental;
- 4 on Engagement and Governance;
- 3 on Funding and Finances; and
- 3 on Strategies and Projects.

These were combined into a table as the core part of a Capacity-building Needs Assessment Interview template form (see Annex I). Interviewees were asked to fill in the top-10 capacity-building needs of their own organisation in one column, and then to provide their own impressions of the top-5 priorities they perceive to be the case for each of two key stakeholder groups in their own region. Additionally, all interviewees were requested to provide any valid examples, positive or negative, from their own region for any of the 26 listed topics, as well as any other examples they knew of from other countries. Finally, there were also framing and administrative questions, the former ensuring it was clear which precise region or country they were using as their perspective, and the latter confirming their approval to the interview's purposes and even to be named in this report.

The purpose of the core questions related to interviewees' own needs was to gain a strong sense of which topics were most important to them, which precise aspects and why they mattered. Learning about their perceptions of other regional stakeholders was an attempt to gain additional insights without having to do further interviews, but of course recognising that those opinions were not wholly confirmed by directly hearing from those other stakeholders. Finally, the reason to ask about examples in their own or other regions was primarily to start building up a viable pool of potential speakers for CINTRAN's developing capacity-building programme, which could then be later refined once the programme's topics had been more precisely decided.

The approach put more emphasis onto interviews with selected stakeholders, plus a further verification round with CINTRAN's four target regions. This last point was introduced in order to ensure, as much as possible, the applicability of the upcoming programme to their own needs, since they are in practice the primary targets for much of CINTRAN's activities.

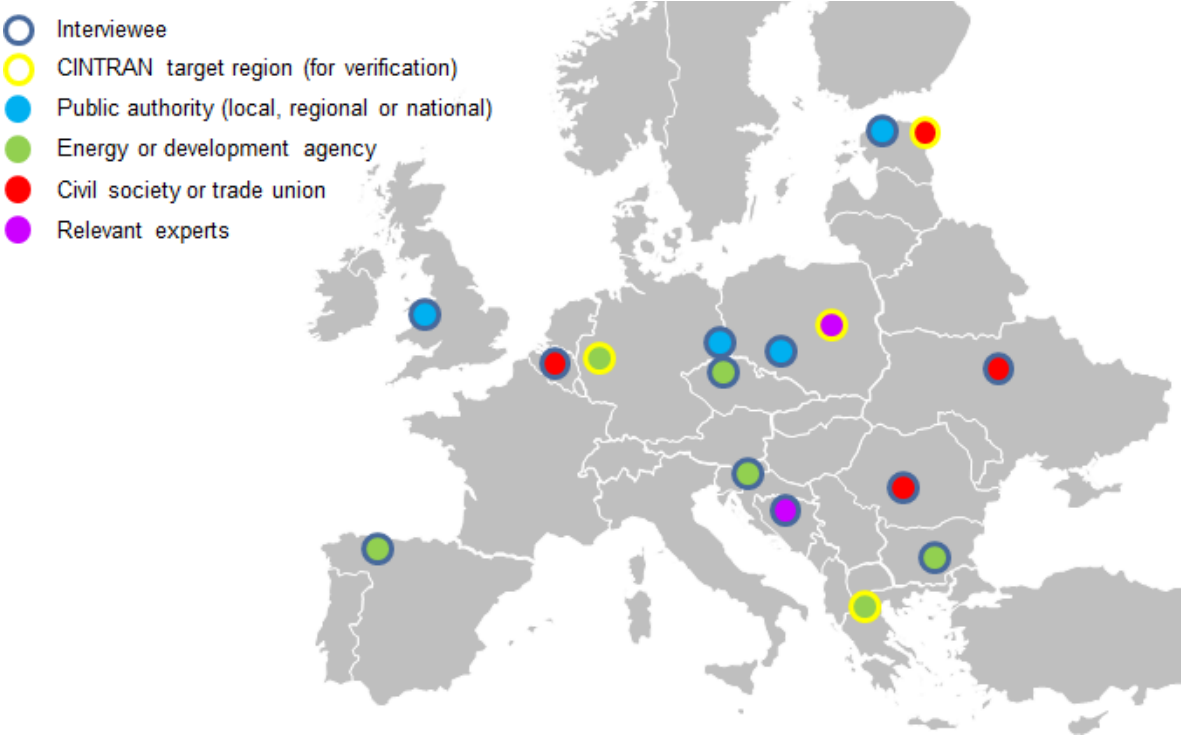


Figure 2. Map of the interviewees and CINTRAN target regions included within the needs assessment.

The ICLEI team used the above-mentioned desk review and confirmation sessions not only for streamlining topics, but also to identify potential interviewees with whom to have discussions. In a general sense, the aim was to target as geographically broad as possible (see Figure 2), including a few beyond EU borders, and from various key stakeholder groups. Certain institutions, organisations and even individuals to potentially interview were named in resources explored during the desk review and brought up during the confirmation sessions. From this pool of specific actors, a final selection was made to interview twelve people from a diverse set of stakeholder groups and countries (see Table 1). Within the dynamic of the needs assessment, their views function as proxies for representing the needs of both other stakeholders in their own country/region as well as the needs of their respective stakeholder groups. Some of the interviewees have somewhat dual roles, but were nonetheless asked to use one as a primary perspective in answering questions.

Table 1. List of the interviewees, and CINTRAN target regions, included within the needs assessment. These individuals provided perspectives based on their own experience, and not necessarily reflecting any official standpoint of their respective organisations.

Interviewee	Organisation(s)	Sector(s)	Region	Country
Corinna Zierold Judith Kirton-Darling	IndustriAll	trade unions association	Europe-wide	Belgium/EU
Damir Miljević	Sustainable Energy Transition Center RESET	think-tank	Western Balkans	Bosnia-Herzegovina
Rumyana Grozeva	Regional Economic Development Agency of Stara Zagora (SZREDA)	development agency	Stara Zagora	Bulgaria
Karel Tichý	Economic and Social Council of the Ústí Region	development agency	Ústí	Czech Republic
Getlyn Denks	Ministry of the Environment (former role) Elering	national authority energy company	nationwide and Ida-Virumaa	Estonia
Katja Müller	Competence Center for public economy, infrastructure and public services (KOWID) Saxon State Ministry of Regional Development	think-tank regional authority	Lusatia (primarily about Saxony, but also Brandenburg)	Germany
Patryk Białas	Katowice City Council Bomiasto.PL	local authority environmental NGO	Katowice and Upper Silesia	Poland
Sabina Irimie Gloria Popescu	Jiu Valley Social Institute Association (ISVJ) ISPE Design and Consulting	social NGO SME/think-tank	Jiu Valley	Romania
Niko Natek	Energy agency of Savinjska, Šaleška and Koroška region (KSSENA)	energy agency	Slovenia	Slovenia
Juan Aguilera	Foundation for Asturian Energy (FAEN)	energy agency	Asturias	Spain
Kostiantyn Krynytskyi	Eco-Action	environmental NGO	Donetsk	Ukraine
Kenn Palmer	Welsh Government	regional/national authority	Wales	United Kingdom

CINTRAN target region	Organisation	Sector	Region	Country
<i>Hardi Murula</i>	<i>Association of Ida-Virumaa municipalities (IVOL)</i>	<i>local authorities association</i>	<i>Ida-Virumaa</i>	<i>Estonia</i>
<i>Christian von Styp</i>	<i>Future Agency of the Rhenish Revier</i>	<i>development agency</i>	<i>Rhenish</i>	<i>Germany</i>
<i>Dimitris Ziouzos</i>	<i>Regional Development Fund (RDF) of Western Macedonia</i>	<i>development agency</i>	<i>Western Macedonia</i>	<i>Greece</i>
<i>Aleksander Śniegocki</i>	<i>WiseEuropa Institute</i>	<i>think-tank</i>	<i>Upper Silesia and nationwide</i>	<i>Poland</i>

As has been mentioned before, the results coming from the twelve interviews of the needs assessment were further explored via verification sessions conducted with representatives from each of CINTRAN's four target regions. A similar approach with these CINTRAN regional partners was done (i.e. pre-answering a similar table with the same 26 topics), but asking them only to provide capacity-building needs for each of their respective regions (as opposed to interviewees providing inputs about themselves and other particular stakeholder groups in their regions). During the session itself, each CINTRAN regional partner had a chance to compare their own answers either to a summary from the interviewee from their own country (for the German and Polish/Estonian sessions) or representing all twelve interviews (for the Greek session, since no other Greek counterpart had been interviewed). Finally, these CINTRAN regional partners were each asked to reflect on the particular capacity-building needs for each of their respective regions, with a special emphasis on exploring which kinds of topics might benefit more from strong interactivity, longer periods for discussion, synergies with on-site visits, etc. The idea was to find meaning which topics could be more appropriate for the two in-person CINTRAN Academy Events, and which for the ten e-seminars. These regional perspectives represent the final set of key insights to be analysed for the needs assessment to be complete enough to establish the basis for CINTRAN's upcoming capacity-building programme.

4. Results

This section outlines the results emerging from the analysis of the twelve needs assessment interviews (whereby these individuals provided perspectives based on their own experience, though not necessarily reflecting any official standpoint of their respective organisations). Later on additional insights gained from the verification sessions with CINTRAN's four target regions are outlined. In order to better evaluate the answers obtained in the twelve interviews, a Miro board was created to visualize all the different topics and indicating for each of them their frequency of being mentioned by the twelve interviewees, either as their own primary needs or as their secondary impressions about other stakeholders (see *Figure 3*). Each topical cluster has been assigned a distinct colour for their respective "sticky notes" (despite limited options for them within Miro): yellow for (Socio-) Economic; light blue for Societal; purple for Infrastructure and Energy; orange for Environmental; red for Engagement and Governance; black for Funding and Finances; and green for Strategies and Projects. Likewise main stakeholder groups (either interviewees themselves or impressions about others) were clustered into six groups, each of which was likewise assigned circle markers of differing colours (with darker hues representing primary needs and lighter tones secondary impressions of others): reds for Civil society and trade unions; blues for Public authorities (local, regional or national); greens for Agencies (energy or development); yellow for Academia/think-tanks; grey for Energy/mining companies; purple for SMEs and black for funds. The number inside each circle marker indicates the number of times the topic has been mentioned by that group of actors. The full set of Miro boards can be found in Annex III.

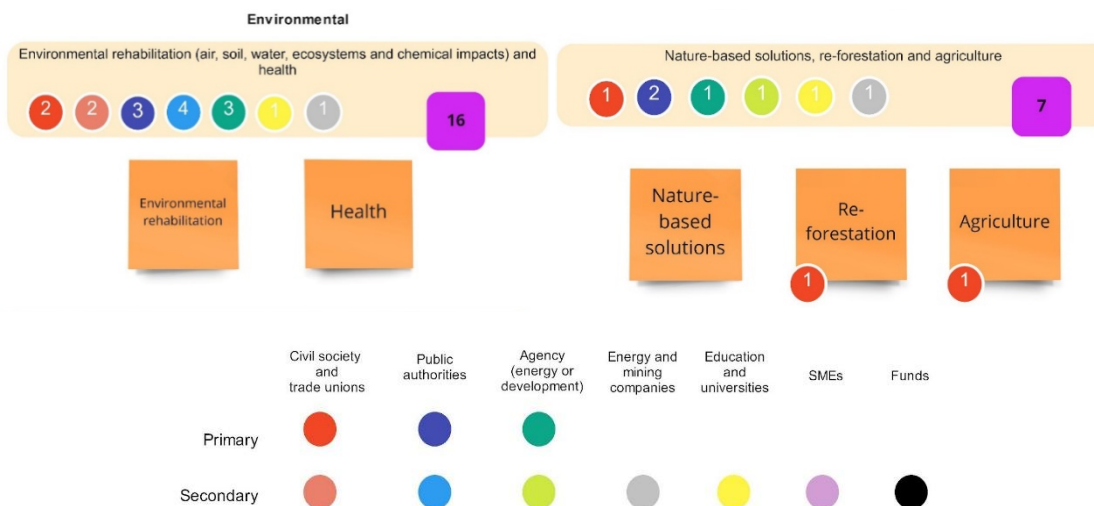


Figure 3. Example of part of the Miro board used for data analysis. Coloured circles indicate the number of first-hand or secondary mentions for various stakeholder groups. See Annex III for the full Miro board.

Drawing on these results depicted here in a visual manner, the main topics of interest are mentioned below, firstly from an overarching view. Secondly, the most important topics for specific stakeholder groups are highlighted, finally followed by some general considerations. Overall, the frequencies below represent a mix from both first-hand interviewees (primary needs) and their interpretation of the most important topics for other stakeholder groups in their own region (secondary impressions).

Moreover, a different kind of overview of the results can be found in *Annex II*, within a table breaking down the frequency of each topics at various grades of importance.

4.1. Most important topics overall

The generally most important topics from all interviewees, at least in terms of frequencies, are listed below in *Table 2*. The number at the end of each topic description indicates the number of times it was mentioned as important, meaning it entered in the top-ten list of the interviewee (and/or for their selected secondary impressions), no matter the individual score given to it.

It is clear from these results that learning more about socio-economic aspects of the coal+ transition seems to be of paramount importance. This is directly linked to the need to learn how to *reskill workers* and establish stronger (long-term) education systems that will help them adapt to new economic circumstances, since the closure of such an important economic activity for a given region must be replaced with *alternative economic activities*, businesses and jobs. Some interviewees even specifically pointed out the strong need for education (whether of current workers or youth) to be oriented towards any new jobs and economic activities in the region. Without approaching it coherently, it could actually exacerbate, rather than reverse, demographic problems such as “brain drain”.

Renewables (though it may be worth clarifying that in the other subtopics listed there - excess heat, district heating/cooling or energy communities - were mentioned much less often than renewables), as well as *other energy measures* to a slightly lesser degree, were also seen nearly as important to build capacities, as being perceived as viable pathways to decarbonise coal+-based energy systems, and potentially even becoming new economic drivers in the regions (including a hope to shift some coal+ workers into these fields). Meanwhile, there seems to be a considerable desire to improve capacities for certain governance-type issues, in particular in *engaging stakeholders* in multiple levels and sectors, as well as a significant gap perceived for *convincing others of the need for the just transition* at all.

Table 2. Six most important topics overall for all stakeholders, based on frequencies combining interviewees' stated own first-hand needs and their secondary impressions of other stakeholders' priorities.

Topic	Overall frequency
Reskilling workers (current vs. future skills), further-/re-training, long-term education system	24
Renewables (solar, wind, biomass, hydro, heat pumps...), excess heat, district heating/cooling, energy communities	23
Multi-level and multi-sector stakeholder engagement and partnerships, pro-active communication	22
Economic diversification, Smart specialisation and businesses/start-ups	21
Convincing stakeholders that the just transition is necessary and what it can mean for different stakeholder groups	19
Other measures: efficiency, (RES) storage, hydrogen, power-to-X, transport...	19

Though the above topics outline more widespread/important capacity-building priorities, it is also worth mentioning those generally given less importance by interviewees, including the following:

- *Public costs and avoided-costs (e.g. coal subsidies, long-term health) from the just transition* - only six mentions
- *Nature-based solutions, re-forestation and agriculture* - only seven mentions
- *Gender components (e.g. jobs, skills, household dynamics...)* - only nine mentions
- *Assessments (e.g. socio-economic impact, vulnerability/risk, land/assets...)* - only nine mentions

However, it should not be interpreted that any of these are actually irrelevant or unimportant - in fact every single one of the four listed above had at least one mention rated as "very high" (see *Annex II*). Instead, these should be seen, generally-speaking, as perhaps merely less widespread in terms of their importance, especially in the face of so many other high priorities for coal+ regions. It might also be just that (some) interviewees might not be well enough aware of them or their potential relationship to them, and that a capacity-building programme, like CINTRAN's, represents a ready-made opportunity to teach many stakeholders about some of these lesser known topics. Such an approach would certainly be in line with what at least one of the interviewees implied, that just because a particular topic is unranked in our interview form, it does not mean there is zero appetite to learn about it.

A full overview of the importance given to each topic can be obtained from the chart graph below (see *Figure 4*), where the number of mentions received by each topic is shown, ordered from highest to lowest. Additionally, the colours in the bars indicate the proportion of these mentions belonging to the different types of stakeholders.



Figure 4. Mentions given to each topic, segregated by type of actor mentioned.

4.2. Stakeholder groups' capacity-building needs

A further assessment of the results identifies the most frequently important topics for certain groups of stakeholders. The lists shown below for three major groups indicating after each topic the frequency for that group, in comparison to the overall result. It should be noted that while in the section above, the most important topics had highest frequencies on the order of 18 to 24 mentions, when looking at individual stakeholder groups, smaller scales should be considered as high frequency per group. For example, 6-9 mentions is the highest for public authorities, while 5-6 is the highest for both other major groups (civil society and trade unions, and energy/development agencies), since these two groups were mentioned less often than public authorities were.

4.2.1. PUBLIC AUTHORITIES (LOCAL, REGIONAL AND NATIONAL)

Table 3. Topics deemed most important by/for public authorities, as compared to overall results, with frequencies combining public authority interviewees' own first-hand needs and others' secondary impressions of public authorities' priorities.

Topic	Frequency for public authorities	Overall frequency
<i>Multi-level and multi-sector stakeholder engagement and partnerships, pro-active communication</i>	9	22
<i>Reskilling workers (current vs. future skills), further/-re-training, long-term education system</i>	8	24
<i>Renewables (solar, wind, biomass, hydro, heat pumps...), excess heat, district heating/cooling, energy communities</i>	8	23
<i>Economic diversification, Smart specialisation and businesses/ start-ups</i>	8	21
<i>Convincing stakeholders that the just transition is necessary and what it can mean for different stakeholder groups</i>	8	19
<i>Environmental rehabilitation (air, soil, water, ecosystems and chemical impacts) and health</i>	7	16

<i>Territorial Just Transition Plans and alignment with other strategies/plans (e.g. energy, environmental, mobility, business innovation, regional development...)</i>	6	17
<i>Public participation and community activism, including dealing with political effects (e.g. voting patterns, populism, election changes...)</i>	6	16
<i>Community cohesion, cultural/ industrial heritage, tourism</i>	6	15
<i>Energy justice and energy poverty</i>	6	14
<i>Demographic changes (e.g. ages, ethnic groups...), social inclusion, migration and (job-)relocation</i>	6	13

Public authorities' top-five capacity-building needs coincide very well with the top-five overall, albeit in a slightly different sequence (see *Table 3*). Apart from those five, and other topics already highlighted in the Overall section above, public authorities also seem to have higher interest in a few topics that do not (quite) make it to the top lists even for the stakeholder groups mentioned in the next two sections. Based on these twelve interviews, it seems that they are more concerned about *environmental rehabilitation and alignment of strategies/plans*, as well as *community cohesion and heritage, energy justice/poverty and demographic changes and social inclusion*. They are also relatively highly interested in *activating their communities through public participation*, but this is not unique to them, as seen in the next section. When thinking about the general mandate held by public authorities, it should come as no surprise that so many of their capacity-building interests are aimed also at addressing governance, participatory and societal concerns.

4.2.2. CIVIL SOCIETY AND TRADE UNIONS

Table 4. Topics deemed most important by/for civil society and trade unions, as compared to overall results, with frequencies combining civil society/trade union interviewees' own first-hand needs and others' secondary impressions of civil society/trade unions' priorities.

Topic	Frequency for civil society and trade unions	Overall frequency
<i>Renewables (solar, wind, biomass, hydro, heat pumps...), excess heat, district heating/cooling, energy communities</i>	6	23
<i>Multi-level and multi-sector stakeholder engagement and partnerships, pro-active communication</i>	6	22
<i>Public participation and community activism, including dealing with political effects (e.g. voting patterns, populism, election changes...)</i>	6	16
<i>Reskilling workers (current vs. future skills), further-/re-training, long-term education system</i>	5	24
<i>Convincing stakeholders that the just transition is necessary and what it can mean for different stakeholder groups</i>	5	19

As mentioned above in *Table 4*, *public participation and community activism* is not a high priority only for public authorities, but also is valued highly for civil society and trade unions. Apart from that, the others in this group's top-five line up with the overall results, though again not always in the same order.

4.2.3. ENERGY/DEVELOPMENT AGENCIES

Table 5. Topics deemed most important by/for agencies (energy or development), as compared to overall results, with frequencies combining agency interviewees' own first-hand needs and others' secondary impressions of agencies' priorities.

Topic	Frequency for agencies	Overall frequency
<i>Reskilling workers (current vs. future skills), further-/re-training, long-term education system</i>	6	24
<i>Other measures: efficiency, (RES) storage, hydrogen, power-to-X, transport...</i>	6	19
<i>Renewables (solar, wind, biomass, hydro, heat pumps...), excess heat, district heating/cooling, energy communities</i>	5	23
<i>Multi-level and multi-sector stakeholder engagement and partnerships, pro-active communication</i>	5	22
<i>Economic diversification, Smart specialisation and businesses/ start-ups</i>	5	21
<i>Attracting private investment, public-private partnerships, innovative financing and public procurement</i>	5	18

As with the other stakeholder groups in the previous sections, there is some alignment between overall top priorities and those of energy/development agencies (see Table 5). However, there is a distinct addition of seeing a greater need for *other energy measures*, actually even slightly higher than the generally more popular *renewables* topic. This can be seen, at least partially, also as a reflection of these agencies' expertise and awareness about diverse energy technologies. For example, many interviewees were interested in hydrogen as a promising move in energy.

4.3. Needs assessment verification with CINTRAN target regions

In addition to the above insights for three broad stakeholder groups, the results of the needs assessment can also be considered from the perspective of certain countries. Representatives of the four CINTRAN partner regions were also interviewed, primarily in order to verify that the needs assessment results reflected also their own needs, but also to compare with other opinions from their own country and thereby (together) possibly serving as a proxy for priorities in those countries as well. Overall, their answers confirmed the prior results to a large degree, though here can be found considerations for each region. More details about country-level variations, based on both the twelve interviews and four verification sessions, can be found in the Annex II.

4.3.1. ESTONIA: IDA-VIRUMAA

Since Ida-Virumaa is Estonia's only relevant coal⁺ region (in this case oil shale), then both interviews used it as the same reference (though one had a more national-level perspective). In both cases, socio-economic topics were consistently prevalent, with very high interest in *economic diversification and businesses/start-ups* – seen as a way to build new identity in this Estonian region – together with *reskilling workers and long-term education* as a means of supporting a shift away from mono-economies. Meanwhile, a better understanding of *demographic changes, social inclusion, migration and (job-)relocations* could benefit the region greatly, since it is experiencing high *unemployment* and population loss since the 1990s (and of course such a “brain drain” is a common problem in coal⁺ regions (especially in Eastern Europe) mentioned by several interviewees. Consequently, interest in *renewables* and *efficiency* may be quite strong as companies demand green energy in order to be more competitive and attract investment to the region. However, for these changes to take place, it seems that Estonian actors need to improve *governance for decision making* (at the moment only a single fully-dedicated person in the national ministry). For example, *convincing stakeholders that the just transition is necessary* remains a key obstacle, since the just transition is still not perceived as a real strategy for change in Estonia (it

is still developing its *Territorial Just Transition Plan*) and it seems there is neither extended *involvement of communities affected* nor full transparency. Moreover, unemployment might also be (partially) addressed via if key stakeholders built their capacities for *public-private partnerships, innovative financing and public procurement*, as well as about *accessing/blending various funding instruments* and improved *prioritisation of projects*.

4.3.2. POLAND: UPPER SILESIA

Though both Polish interviewees had a distinct focus on Upper Silesian capacity-building needs, it should be stated that one has a wider national perspective, but still states that much of these needs also apply to other Polish coal regions. Upper Silesian priorities remain largely in line with those found overall as important for all stakeholders, with (socio-)economic issues seen as quite high priorities, since many local *economies are not yet diverse* enough and there still are too few *jobs to shift* into, as well as knowledge of how to increase *reskilling* opportunities to successfully leave behind coal-related jobs. Such conditions naturally lead to very high concerns about *demographic changes and migrations*. Though infrastructure and energy topics actually only spurred medium interest in the Upper Silesian context, *environmental rehabilitation* was deemed to be quite a high learning priority to overcome such long-lasting impacts and improve health. Furthermore, the thematic cluster of engagement and governance seems to be of generally high importance to these Polish stakeholders, such as *stakeholder engagement* and *public participation*. However, unlike the overall results described above, there seems to be little need to *convince stakeholders about the just transition* itself. Instead there is a high need to develop better *governance infrastructure and processes*, since the region apparently experiences a lack of cooperation between different stakeholders (e.g. ministries, regional authorities and trade unions), which may explain why they feel there is still work to do in making sure its *just transition planning* aligns with other sectoral strategies.

4.3.3. GERMANY: RHENISH REVIER AND LUSATIA

From the start, it should be noted that the initial interview focused specifically on Lusatia (on Germany's eastern border), while the second session focused only on CINTRAN's German target region of the Rhenish Revier (in the far west of the country). This is pointed out, because although the two regions share several similarities, there are also some distinct discrepancies worth highlighting. Both were in relative agreement about the high importance of topics related to *renewables, energy efficiency* and related technologies (including interests by both for *hydrogen*), *attracting private investment* and *just transition planning/alignment*. *Stakeholder engagement and communication* was considered important by both, but especially so for the Rhenish partner due to complications in working with the high number of different stakeholders in their region (e.g. reaching agreements with 18 different members of their board). The main discrepancies can be summarised as certain topics being more important to Lusatia, but less urgent in the Rhenish Revier. For example, all topics under the societal theme, *environmental rehabilitation, governance, public participation* and learning how to better *convince stakeholders* all were (much) less prominent concerns in the Rhineland. To some degree, some of these discrepancies might just represent a somewhat different mindset between the two interviewees (one from a public authority and the other a business-oriented development entity), but it also likely can be explained through the lens of historical differences and still-pervasive gaps between West and East Germany. It may also be that the Rhenish Revier's relative proximity to two other German post-coal transition(ed) regions, the nearby Ruhr and Saarland, likely has increased opportunities to close certain knowledge gaps that still remain less resolved in Germany's eastern coal regions.

4.3.4. GREECE: WESTERN MACEDONIA

Since there was only a single Greek interview, with a CINTRAN partner in Western Macedonia, then results here are inherently consistent and can be considered as (at least somewhat) representative for that region. These responses were quite similar to the overall results from the main interviews, though of course displaying some differences as well. Two of their top priorities are to learn more about *job-shifting to quality jobs*, through *re-skilling and improved educational opportunities*, due to the region's high *unemployment* and relatively *non-diverse mono-economy* (mainly centred on coal mining and energy production). Another priority, also quite in line with the thoughts of the majority, is to learn more

about developing *Territorial Just Transition Plans and their alignment with other strategies/plans*, since the region seems to be lacking direction on how to proceed and seems eager to move forward on this overall planning process as a key basis to steer their development of sectoral strategies. Though they also remain keen to understand how to *attract private investment and establish public-private partnerships*, they seem more interested in learning to *access/blend Just Transition Funds with other European instruments* than was the case among most of the other interviewees. The Western Macedonian colleagues also expressed a particular interest in developing a strategic approach to potential regional solutions in the form of *tourism*, which is for now greatly lacking in the region, or *agriculture*, though admitting that their own (climate) conditions might not be quite as competitive for mass agricultural production.

5. Capacity-building Concept

As can be seen from the sections above, there are some slight differences between stakeholder groups and countries, but such is honestly to be expected, since the various actors have differing agendas and each of the regions, and even countries, is at a different stage of coal⁺ transition. Despite such diverging agendas and degrees of development, interviewees' answers demonstrate broad commonalities still exist in the capacity-building needs of coal⁺ regions across Europe. There is a definite need for capacity-building on *(socio-)economic* and *funding/financing* issues, as well as distinct knowledge gap about *engagement/governance*. The fact that interest in learning more about *renewables* (or even other types of energy issues like efficiency) also should not be surprising, considering that sustainable energy options have long been promoted as a kind of "holy grail" for regional development all across Europe, but for coal⁺ regions it can easily be seen why it is thought to be a logical next step, since they are already used to taking energetic considerations into account for so long. Despite the distinct overall preference on renewables over other types of energy measures (except perhaps among energy/development agencies), there may be a strong case to be made to emphasise even more the EC's own "*Energy Efficiency First*" principle, especially with its strong synergies addressing *energy poverty* issues often found in these same regions..

Otherwise, there remain many topics that are generally perceived as lower priority by interviewees. While it might be seen as unfortunate that issues like *gender components* (e.g. *jobs, skills, household dynamics...*), *assessments* (e.g. *socio-economic impact, vulnerability/risk, land/assets...*), *nature-based solutions, re-forestation and agriculture and public costs and avoided-costs* (e.g. *coal subsidies, long-term health*) from the *just transition* were relatively infrequently cited as top priorities, this should actually be thought about in the context that coal⁺ transition regions face so many urgent priorities all at once, and so it is inevitable that some topics will be made to wait. Nonetheless, from a capacity-building perspective, these interest-gaps can be also interpreted as wide-open opportunities to teach stakeholders about such issues. Furthermore, considering that the initial confirmation sessions uncovered some overlaps between some of these less popular topics (including the *gender* and *public costs* examples mentioned above) and some of CINTRAN's other activities, there might be viable synergy to build such capacities anyway within this capacity-building programme.

In any case, the topics to be chosen should also be particularly aligned towards those stakeholders most relevant to the coal⁺ transition. While it was not an explicit objective of the needs assessment process to necessarily determine which stakeholders are most crucial to build capacities, looking at the above results breakdown according to stakeholder groups reveals an interesting point. One can easily notice that public authorities are the most commonly mentioned, and therefore perhaps read between the lines to interpret that they might even be considered as (the most) key stakeholders in coal⁺ regions - also it is worth noting that civil society and trade unions were mentioned quite often as well. It should not be so unexpected that it is the case that public authorities are expected to be strong drivers of coal⁺ transitions. It is also a welcome result to see that so many count also on knowledge-gains from civil society and trade unions, amongst other actors as well. From the standpoint of the upcoming capacity-building programme, these points at least provide some support to the team's original intention that CINTRAN's Academy Event series might be best designed in a way that is (at least somewhat) oriented towards public authorities' capacity needs, but still includes elements of interest to other key actors. Considering the substantial overlap on topics between stakeholder groups, it should theoretically not be

too difficult to satisfy some of the needs of public authorities, and still pique the interests of an even broader set of participants.

Nonetheless, all this must certainly be assured as remaining within the scope of and capacities of the CINTRAN project itself to deliver - our single project cannot build all capacities on its own, but it can certainly contribute towards important steps in this direction. This is why next steps will focus greatly on aligning the results of this needs assessment with CINTRAN's own activities and outputs. It is already clear to the team that ample synergetic opportunities exist, it merely remains to be seen which ones will be brought forth and in which format.

5.1. Capacity-building structure

From a more practical point of view, more detailed planning of CINTRAN's "Regions in Transition" Academy Event series is still needed, not only in terms of topics or stakeholders as described above, but also in terms of formats, timeframes, etc. A general framework was already created and can be used as a foundation to build on: 10 e-seminars (1 or more hours each) and 2 in-person events (2-3 days each, tentatively planned in April 2022 and Feb 2023, at least one of which likely located in either Ida-Virumaa, Estonia, and/or Western Macedonia, Greece).

The e-seminars by their very nature as online events are somewhat more restricted in terms of viable formats. Although open-discussion virtual meetings of course could be done amongst all participants, restricting their interactivity might actually allow these sessions to become more efficient (e.g. on schedule) and effective (e.g. attracting a wider audience more interested in learning, rather than actively contributing). Therefore a tentative format might focus on a set of 2-4 presentations during each e-seminar, followed by a Q&A session open to the audience. As for content, the aim would be to select from the topics analysed during the needs assessment those which require less interaction and/or time to present. Furthermore, under current circumstances where professionals are inundated with a flood of online meetings and similar e-seminars, it would be to CINTRAN's advantage to offer to the public attractive events on quite specific issues, for example rather than an e-seminar titled "Communication about the coal+ transition", instead focus it on "Effective and persuasive communication to convince stakeholders the coal+ transition is necessary" or instead of "Governance for the coal+ transition" we would rather opt for "The essential role of meaningful participation and transparency for the coal+ transition" - N.B. these are simply examples of potential precision in e-seminar development, not necessarily exact e-seminars which will definitely be organised.

Meanwhile, the in-person events would likely thrive best as interactively as possible. All their included sessions should aim to take full advantage of such a live, physical setting and especially include options which do not work in a virtual format (e.g. on-site study visits). Though time will likely be made for sessions benefitting CINTRAN's work (e.g. workshops feeding into project research or feedback on forthcoming/recent project materials), perhaps even allowing similar space for others (e.g. "sister" projects' activities), the intention is to devote most of the events' 2-3 days for sessions building participants' capacities more intensely. One proposal still to be discussed with CINTRAN's regional partners is establishing dedicated modules focused on topics of great interest to each of their regions. For example, tapping into desires stated in their respective verification sessions at the end of the needs assessment, one module might use the Rhenish Revier as a case study to collectively outline aspects of a strategy for attracting investments and international companies, while another module might brainstorm ideas for developing/improving Western Macedonia's Just Transition Strategy. In both cases, participants interested respectively in investment-attraction or transition strategies could directly contribute to transitions in the Rhenish Revier and Western Macedonia, respectively, and of course benefit themselves by collaborating in a learning-by-doing process with other participants. This concept mirrors well the general approach of CINTRAN's entire "Regions in Transition" Academy Event series: clear capacity-building benefits enhancing the transitions of the project's four target regions, but still broad advantages and knowledge nonetheless to be gained by diverse stakeholders from multiple regions.

Finally, in terms of timeframes, the entire Academy Event series will likely best be spread out over a period of time in 2022 and 2023, possibly even into early 2024. Having an e-seminar occurring every 2-

4 months (e.g. so as to avoid summer holidays), interspersed with the two in-person events in spring 2022 and 2023, can lead to multiple benefits. With adequate periods between them, it helps ensure their proper organisation and promotion, while maintaining such a relatively steady series of events is useful for promotional purposes to keep CINTRAN current and topical in various (social) media channels. Furthermore, such a prolonged series presents multiple opportunities for synergies with CINTRAN's other WPs (e.g. to promote other project outputs, or even perhaps to gain inputs to its other activities), and other initiatives (e.g. activities and outputs from “sister” projects), not to mention flexibility to link up with larger events (e.g. Just Transition Week, EWRC, EUSEW, COP, Local Renewables, etc.) as possible and appropriate.

6. Conclusions

The needs assessment process has revealed both mutual interests and differences amongst diverse stakeholders and coal+ regions across Europe. It stands out clearly from the results that there is a strong interest in learning more about socio-economic aspects of the coal+ transition (e.g. economic activities, jobs and skillsets), practicalities of engagement and governance (e.g. partnerships, participation and decision-making), and about the development of new (energy) infrastructure (e.g. cleaner and more efficient coal+ substitutes). Commonalities and discrepancies were of course to be expected given the diversity of the interviewees, and these very differences may prove helpful to target specific audiences for each event planned for CINTRAN's upcoming capacity-building programme, but at the same time they also likely point out issues which may be relevant, but just not yet given ample consideration. Specifically, the needs of public authorities were some of the most highlighted, suggesting a clear focus group for the capacity-building events.

Overall, the needs assessment solidly informs the capacity building programme. However, there are two limitations worth mentioning. Firstly, CINTRAN's ambition cannot exactly satisfy all stakeholders' needs. The team will have to adapt in finding the most suitable overlap between needs and competencies available amongst the project team. Simultaneous CINTRAN research, for instance, has focused on the region's coping strategies (i.e. strategies to deal with the coal+ transition). Therefore, the CINTRAN team will find a suitable overlap between the needs assessment results and coping strategies results. The second limitation is that although the needs assessment is based on a diversity of perspectives, it is still based on a limited pool of twelve interviewees and four verification sessions. Moreover, the interviews do not directly represent the voices of very marginalised groups, such as low income people, nor even of typically dominant actors, like mining companies. Therefore it cannot be claimed to cover all existing perspectives and needs in depth, though this was a necessary approach to streamline the methodology. In order to overcome such necessary deficits, CINTRAN's own project team will use their own expertise to introduce such angles, including through an upcoming internal workshop where the needs assessment results will be discussed amongst the consortium members in detail, particularly through the lens of CINTRAN's mandate. In this occasion, each consortium partner will be able draw upon their own research activities and expertise on the specific issues, including knowledge and activities outside of CINTRAN. This will provide a mapping overview of who can contribute, and how, to ensure that the project's upcoming capacity-building programme delivers as much impact as possible.

7. Annex I - Capacity-building needs assessment interview template form

- BEFORE OUR INTERVIEW:** Before beginning, so we better understand the context you're thinking of, **which area** will be your basis for responding to the remaining questions of this template?
 - o *Specific region(s).* _____ or
 - o *Whole country (in general).* _____
- BEFORE OUR INTERVIEW:** Please select below those challenges/opportunities from both tables which reflect **your own top 10 or fewer topic-priorities and skill-needs** (and/or others like you) for building your capacities for the coal transition in your region
 - Please indicate your selections clearly: *ideally ranking them 1 to 10, or however you prefer to mark them so we can follow up in our interview.*

Theme	Topics	For question 2 above	For questions 3-5 below			
		2. Priority for you	3a.	3b.	4. OWN positive/negative example	5. OTHER positive/negative examples you know
(Socio-) Economic	Economic diversification , Smart specialisation and businesses /start-ups					
	Job-shifting , improving job quality and resilience of sectors					
	Reskilling workers (current vs. future skills), further-/re-training, long-term education system					
Societal	Community cohesion , cultural/ industrial heritage , tourism					
	Demographic changes (e.g. ages, ethnic groups...), social inclusion , migration and (job-)relocations					
	Gender components (e.g. jobs, skills, household dynamics...)					
Infrastructure and Energy	Individuals' identity crisis (from job loss), and resulting social challenges (e.g. mental health, alcoholism, domestic violence...)					
	Closure of mining sites (administrative and/or technical) and public safety					
	Repurposing industrial infrastructure, equipment and facilities					
	Renewables (solar, wind, biomass, hydro, heat pumps...), excess heat, district heating/cooling , energy communities					
	Energy justice and energy poverty					
Environmental	Other measures: efficiency , (RES) storage , hydrogen, power-to-X, transport ...					
	Environmental rehabilitation (air, soil, water, ecosystems and chemical impacts) and health					
	Nature-based solutions , re-forestation and agriculture					

Theme	Topics	For question 2 above	For questions 3-5 below			
		2. Priority for you/	3a.	3b.	4. OWN positive/negative example	5. OTHER positive/negative examples you know
Engagement and Governance	Convincing stakeholders that the just transition is necessary and what it can mean for different stakeholder groups					
	Multi-level and multi-sector stakeholder engagement and partnerships, proactive communication					
	Public participation and community activism, including dealing with political effects (e.g. voting patterns, populism, election changes...)					
	Governance infrastructure and processes for effective decision-making					
Funding and Finances	Attracting private investment, public-private partnerships, innovative financing and public procurement					
	Just Transition Platform/Fund and other European instruments: access and blending					
	Public costs and avoided-costs (e.g. coal subsidies, long-term health) from the just transition					
Strategies and Projects	Territorial Just Transition Plans and alignment with other strategies/plans (e.g. energy, environmental, mobility, business innovation, regional development...)					
	Assessments (e.g. socio-economic impact, vulnerability/risk, land/assets...)					
	Feasibility studies and the development/prioritisation of effective projects					

3. OPTIONALLY BEFORE OUR INTERVIEW: Which (two) **other stakeholder groups** (e.g. local/regional authorities, specialist agencies, civil society, trade unions, companies, etc.) do you see as most **crucial to have a role in leading and/or supporting** the coal transition in your region?

a.

b.

Based on the previous question #3, **please indicate their top 5 or fewer capacity challenges/opportunities** in their respective columns of the table above which reflect their priorities/needs most necessary for better supporting/leading the coal transition in your region.

– Please indicate these selections clearly in each column: ideally ranking them 1 to 5, or however you prefer so we can follow up in our interview.

4. **OPTIONALLY BEFORE OUR INTERVIEW:** For any of the challenges/opportunities in this list, do you have **any relevant experiences of your own** which you think would be valuable to share with others, whether **positive** or **negative**?
 - Please indicate these selections clearly the table above: with an X, +, - or however you prefer to mark them so we can follow up in our interview
 - no need to write here any details about examples you have in mind, as we can either discuss this in the interview, or follow-up afterwards.

5. **OPTIONALLY BEFORE OUR INTERVIEW:** For any of the challenges/opportunities in this list, do you know of **any other relevant examples, resources, experts**, etc. which you would recommend as being valuable to share with others, whether **positive** or **negative**?
 - Please indicate these selections clearly the table above: with an X, +, - or however you prefer to mark them so we can follow up in our interview
 - no need to write here any details about examples you have in mind, as we can either discuss this in the interview, or follow-up afterwards.

These remaining few questions we plan to ask during the interview itself, but are disclosing to you here already, in case you might wish to know them ahead of time.

6. Do you have any objections to this **interview being recorded?** beyond our needs assessment, for example potentially used for promoting the project (e.g. a blog article, newsletter section, promotional quote, etc.)?
 - No
 - Yes

7. Do you have any objections to this **interview being used for other CINTRAN purposes** beyond our needs assessment, for example potentially used for promoting the project (e.g. a blog article, newsletter section, promotional quote, etc.)? If you wish, we could share with you any such uses before it is first published. Also be aware that we may need to **share the recording** itself with other CINTRAN partners to prepare any such publishable content – but only if this is fine with you, as well.
 - No
 - Yes

8. Please also be aware that this needs assessment is part of a project deliverable meant to be publicly available. Do you have **any objection to your name, position and/or organisation being explicitly mentioned in that document**, or would you prefer that we **anonymise** your contribution in some way?
 - No
 - Yes

Name: _____ Position: _____ Organisation: _____

8. Annex II - Overall results in more detail

The table below shows a detailed overview of the aggregated answers received from the twelve main interviews in the middle section, indicating for each topic the total number of answers received for a certain degree of importance. The “Overall” column attempts to synthesise into a single, general label the distributed range of numerical answers given for each topic. This kind of an approach is needed, since most interviewees actually answered the pre-interview survey questions in diverging ways - for example: some put 10 as their most important, while others used 1; some ranked several topics with the same value (e.g. put multiple number 10s); and still others provided no numerical ranking at all, but just marking topics with an X or similar. In order to establish a sense of coherence between all of the interviews, the ICLEI team adjusted all interviewees’ scales to be similar, and text-based, instead of numerical, importance: Very high, High, Medium, Low or Very low. Nonetheless, it should be noted that even those of “Very low” importance still should be considered top-ten priorities to these regions, since those of the absolute lowest priority simply were not ranked by interviewees at all.

Meanwhile, the columns at the right portray findings for CINTRAN’s four target countries. These indicate a merging of the main interviewees’ first-hand perspectives with their secondary impressions, as well as incorporating the opinions coming from the target regions in the same respective countries (except Greece, which lacked an initial main interview). In many cases, small to large discrepancies can be noted (e.g. “Very high / Low”), which are an attempt to not lose the diversity of opinions to be found within a given country, either arising from varying (perceived) needs for different stakeholder groups or even for differing priorities from separate regions in the same country.

Theme	Topics	Over all	Very high	High	Medium	Low	Very low	Estonia	Germany	Greece	Poland
(Socio-) Economic	<i>Economic diversification, Smart specialisation and businesses/start-ups</i>	Very high	11	5	5	0	0	Very high	Very high / Medium	High	High
	<i>Job-shifting, improving job quality and resilience of sectors</i>	High	3	4	4	0	0	High	Very high / Medium	Very high	
	<i>Reskilling workers (current vs. future skills), further-/re-training, long-term education system</i>	Very high	10	5	7	2	0	Very high	Very high / Medium	Very high	High / Medium

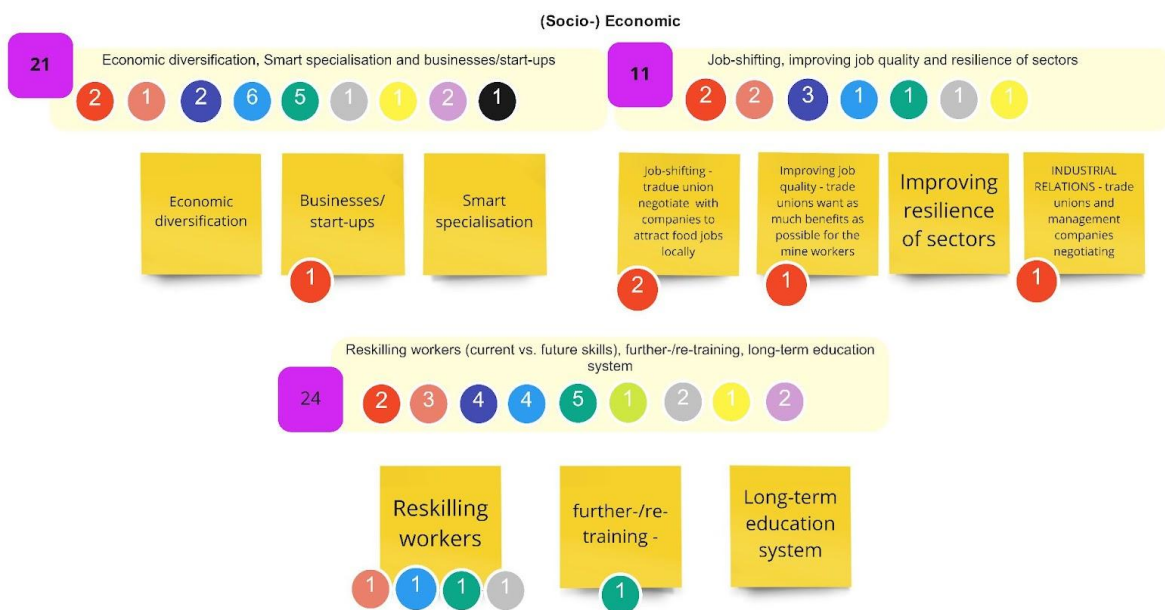
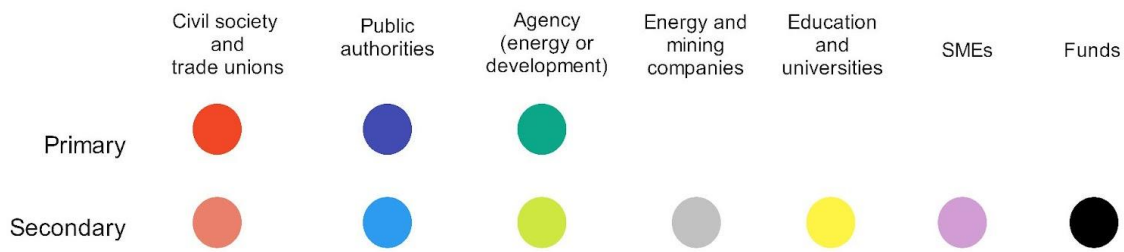
Theme	Topics	Overall	Very high	High	Medium	Low	Very low	Estonia	Germany	Greece	Poland
Societal	<i>Community cohesion, cultural/ industrial heritage, tourism</i>	Medium	1	3	7	3	1	High / Medium	High / Low	High	Low
	<i>Demographic changes (e.g. ages, ethnic groups...), social inclusion, migration and (job-)relocations</i>	Very high	8	2	2	1	0	Very high	High / Medium	High	Very high
	<i>Gender components (e.g. jobs, skills, household dynamics...)</i>	Medium / Low	1	3	2	2	1	High	Very high / Very low	Medium	Very low
	<i>Individuals' identity crisis (from job loss), and resulting social challenges (e.g. mental health, alcoholism, domestic violence...)</i>	High / Medium	0	6	5	1	0	High	High / Medium	Medium	
Infrastructure and Energy	<i>Closure of mining sites (administrative and/or technical) and public safety</i>	Medium	5	1	2	3	1	Medium	Very high	High	Medium
	<i>Repurposing industrial infrastructure, equipment and facilities</i>	High	7	3	2	1	2	High	High / Low	High	Medium
	<i>Renewables (solar, wind, biomass, hydro, heat pumps...), excess heat, district heating/cooling, energy communities</i>	High / Medium	3	8	8	4	0	Very high / Very low	Very high / Medium	High	Medium / Low
	<i>Energy justice and energy poverty</i>	Medium	2	3	7	1	1	Very high / Medium	High	Medium	
	<i>Other measures: efficiency, (RES) storage, hydrogen, power-to-X, transport...</i>	Medium	3	4	7	3	2	Very high	Very high	High	Medium / Low

Theme	Topics	Overall	Very high	High	Medium	Low	Very low	Estonia	Germany	Greece	Poland
Environmental	<i>Environmental rehabilitation (air, soil, water, ecosystems and chemical impacts) and health</i>	High	7	1	4	2	2	High / Low	Very high / Medium	Medium	Very high / Medium
	<i>Nature-based solutions, re-forestation and agriculture</i>	Medium / Low	2	1	3	1	0	High	Medium / Very low	High	
Engagement and Governance	<i>Convincing stakeholders that the just transition is necessary and what it can mean for different stakeholder groups</i>	High	7	3	5	2	2	Very high / Medium	Very high / Low	High	
	<i>Multi-level and multi-sector stakeholder engagement and partnerships, pro-active communication</i>	High	7	3	5	3	4	Very high / Very low	Very high / Medium	Medium	Very high / Very low
	<i>Public participation and community activism, including dealing with political effects (e.g. voting patterns, populism, election changes...)</i>	Medium / High	4	3	6	2	1	High	Very high / Low	Medium	High / Medium
	<i>Governance infrastructure and processes for effective decision-making</i>	High	6	1	2	2	0	Very high / Low	Very high / Medium	High	High

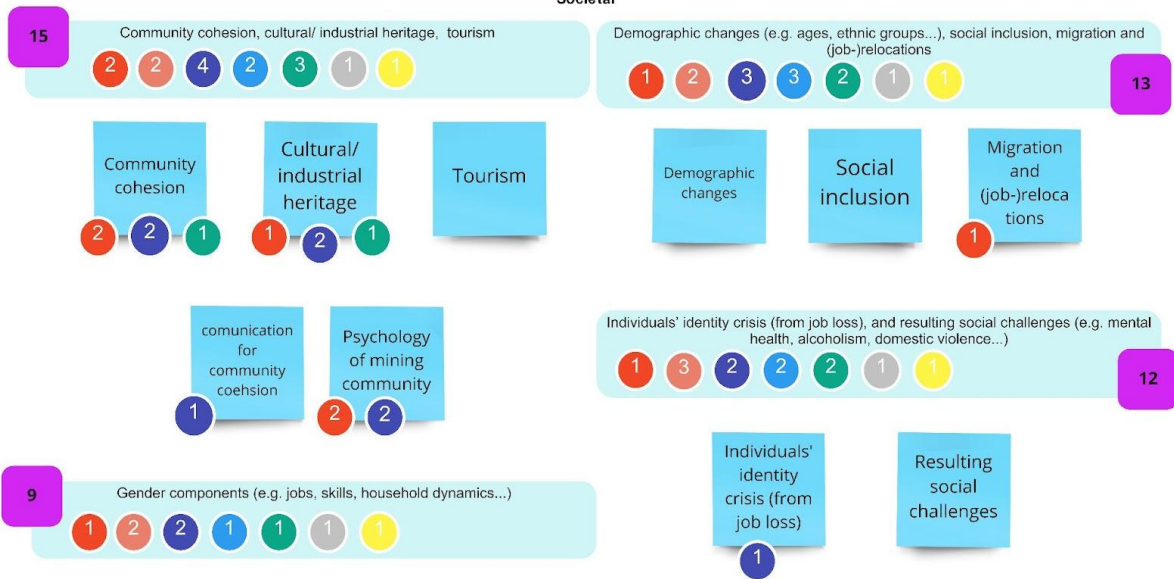
Theme	Topics	Overall	Very high	High	Medium	Low	Very low	Estonia	Germany	Greece	Poland
Funding and Finances	<i>Attracting private investment, public-private partnerships, innovative financing and public procurement</i>	Medium	4	1	9	1	3	Very high / Medium	Very high	Very high	
	<i>Just Transition Platform/Fund and other European instruments: access and blending</i>	Medium	4	3	2	4	2	Very high / Low	Very high / Very low	Very high	Low
	<i>Public costs and avoided-costs (e.g. coal subsidies, long-term health) from the just transition</i>	Low	1	3	1	0	1	High	High / Medium	Low	Medium
Strategies and Projects	<i>Territorial Just Transition Plans and alignment with other strategies/plans (e.g. energy, environmental, mobility, business innovation, regional development...)</i>	High / Medium	3	6	6	0	2	Very high / High	High	Very high	Very high / High
	<i>Assessments (e.g. socio-economic impact, vulnerability/risk, land/assets...)</i>	Medium	2	1	3	1	2	Very high / Medium	Very high / Medium	Medium	
	<i>Feasibility studies and the development/prioritisation of effective projects</i>	Medium	1	3	3	0	4	Very high	High / Medium	Low	

9. Annex III - Miro board analysis

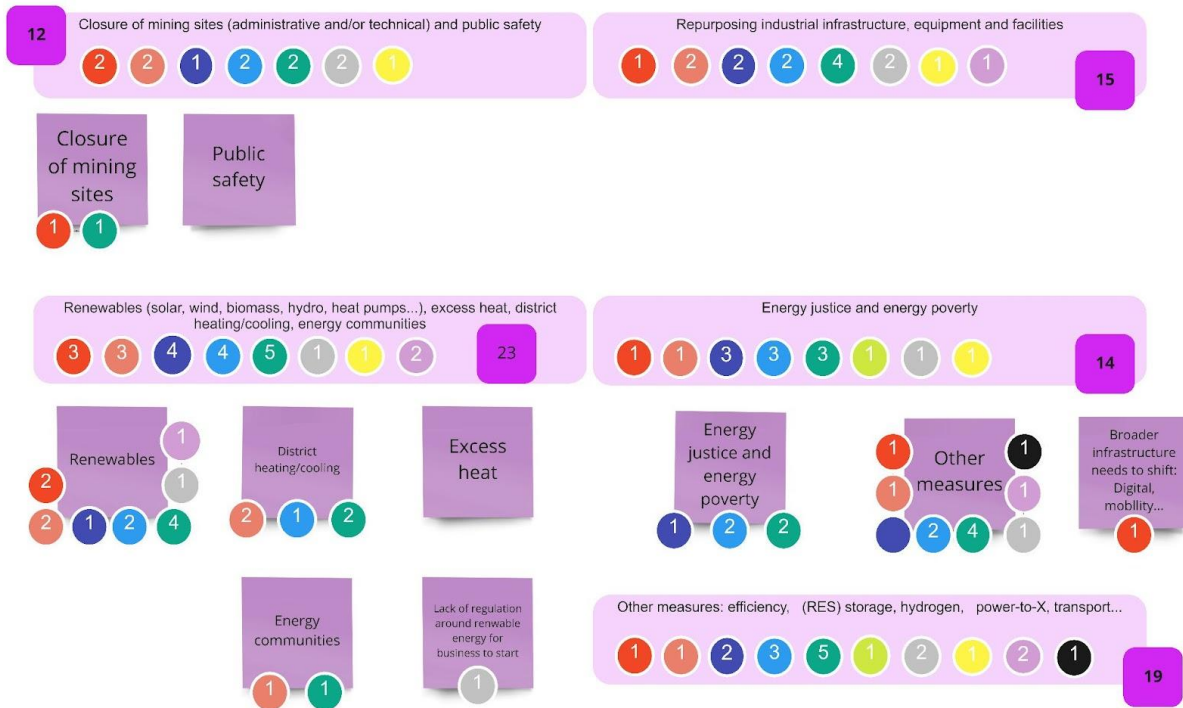
The images below portray the Miro boards used to analyse interviewees' responses in a visual manner, and as sorted into the seven thematic clusters – N.B. these Miro boards depict only results from the twelve main interviews, and therefore do not also represent the perspectives of the verification sessions with CINTRAN's four target regions. Numbers inside the colour-coded circles indicate the number of mentions of that topic from the interviewees, either about primary needs or secondary impressions about others. They are clustered by the sector they represent, while the numbers in the purple boxes simply indicate the total number of mentions from all stakeholder groups, regardless of being primary or secondary impressions. The textboxes below each topic represent the main identified subtopics, but also including some additional ones highlighted by one or more interviewees. For those textboxes with few coloured dots, or even none at all in some cases, it does not mean that such a subtopic was irrelevant, but rather that it was just too difficult to extract interviewees' potential opinions as explicitly distinct from their views on the main topics. The purpose of including this annex, despite overlaps in data already available within the table of the previous *Annex II* (i.e. the numbers here depicted in the purple boxes corresponding to the total of values in the above table) is simply to share further insights about differing opinions about different stakeholder groups' (perceived) capacity-building needs.



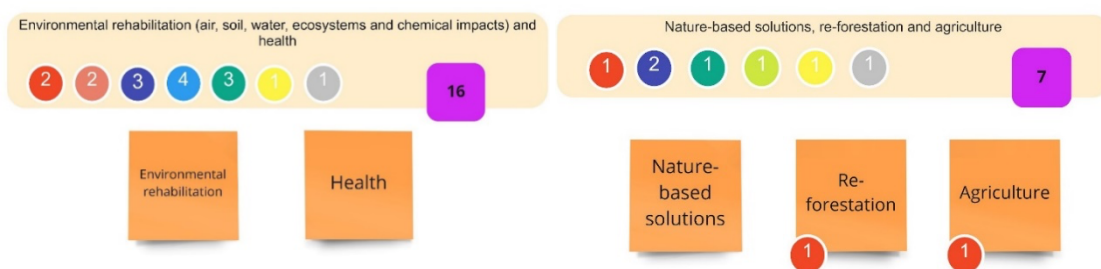
Societal



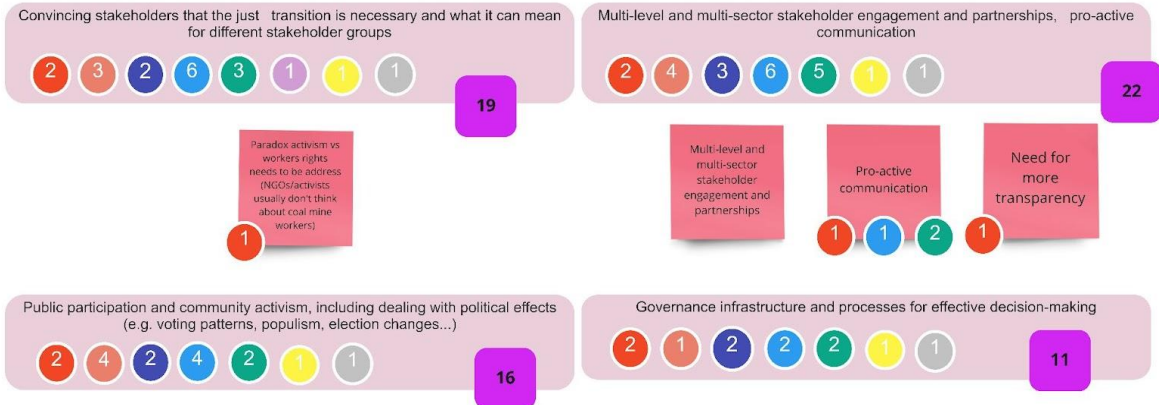
Infrastructure and Energy



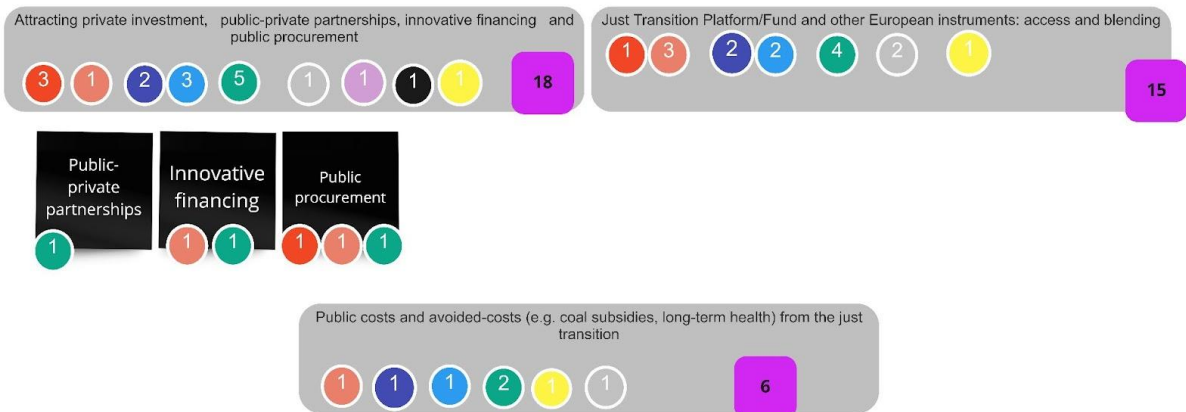
Environmental



Engagement and Governance



Funding and Finances



Strategies & Projects

