

UPDATE ON THE ECONOMIC IMPACT ASSESSMENT OF THE BATTERY CELL PLANT

RESULTS

9.1.2024

UPDATE ON THE ECONOMIC IMPACT ASSESSMENT OF THE BATTERY CELL PLANT REPORT

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Background

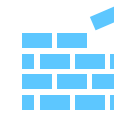
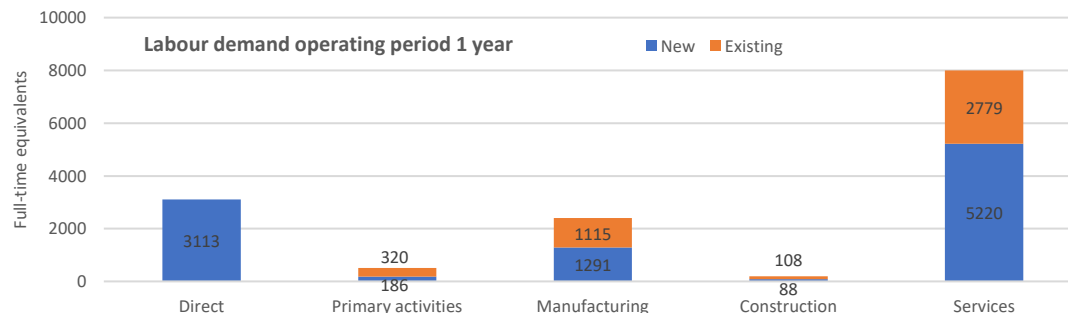
- To date Finland is the only significant producer of raw materials for lithium-ion battery production in Europe thus Finland has an excellent opportunity to build and further develop battery value chain.
- Investments into activities within battery value chain in Finland will have significant impacts on the regional economies in Finland.
- The assessment estimates the direct and following indirect production and consumption impacts (multiplicative effect) on the Finnish economy brought by the planned battery cell production.
- Estimates in modelling are based on initial data from Finnish Minerals Group on cost of building and operating the battery cell factory with nominal capacity of 60 GWh per annum.

Method

- The modelling method used is based on the resource flow model developed by Ramboll and Natural Resources Institute of Finland in co-operation in 2013-2015 commissioned by Sitra.
- The model is based on most current Finnish economic equilibrium and interactions data including foreign trade.
- The model is two-parted as it displays the impacts as change between current state (BAU) and forecast state (after introducing the impacts on the economy). Due to the model's multidimensional nature it captures the impacts from multiplicative effect between industries and organizations in addition to the direct impacts.
- The input data for modelling was derived from the investment and cost categories as final and intermediate demand on 173 industrial sectors (TOL2008) within the model.

Results

- The battery cell factory will bring new value-producing industrial activity to Finland. It will be a significant investment and significant employer both by itself and through the multiplicative impacts on other industries.
- The multiplicative impacts through the value chain extend to all sectors of society, generating new research and development activities in Finland. All this supports circular economy and carbon-neutral mobility in the future.



- **Cumulative** impacts from the construction phase in Finland:
 - Labour demand approx. **20 100** FTE
 - Change in output approx. **3,6** billion euros
 - New investments approx. **277** million euros
 - Gross domestic product approx. **1,6** billion euros
 - Accrues taxes approx. **714** million euros
- **Annual** impacts during the operating period in Finland:
 - Labour demand approx. **14 200** FTE
 - Change in output approx. **6,2** billion euros
 - New investments approx. **446** million euros
 - Gross domestic product approx. **1,5** billion euros
 - Accrues taxes approx. **667** million euros



Tausta

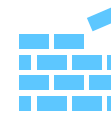
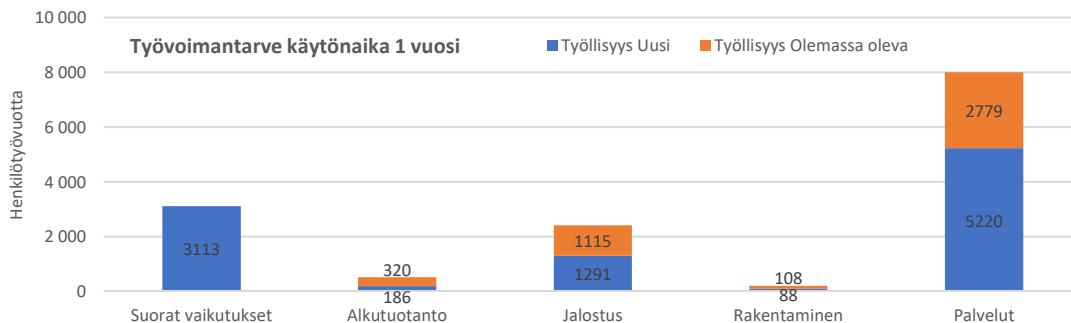
- Suomi on toistaiseksi Euroopan ainoa litiumioniakkujen raaka-aineiden merkittävä tuottaja ja Suomella on loistava mahdollisuus rakentaa arvoketju ja kehittää sitä eteenpäin.
- Investoinneilla akkuarvoketjun toimintoihin Suomessa tulee olemaan merkittäviä aluetaloudellisia vaikutuksia Suomessa.
- Selvityksessä on arvioitu akkukennotehtaan suorat aluetaloudelliset vaikutukset, tuotannon kerrannaisvaikutukset ja suunnitelluista toiminnoista syntyvän kulutuksen kerrannaisvaikutukset Suomessa.
- Mallinnuksen lähtötietoina on käytetty Suomen Malmijalostus Oy:n arvioita 60 GWh/a kapasiteetin omaavan akkukennotehtaan rakennuttamisen vaatimista investoinneista (noin 4,8 miljardia euroa) sekä käytön ajan kustannuksista.

Metodi

- Käytetty arviointimenetelmä perustuu resurssivirtamalliin, joka kehitettiin vuonna 2013-2015 SITRA:n toimeksiannosta Rambollin ja Luonnonvarakeskuksen yhteistyönä.
- Käytetty malli perustuu tuoreimpiin talouden vuorovaikutussuhteisiin Suomessa, huomioiden myös ulkomaankaupan.
- Malli on kaksiosainen, jolloin se kuvaa aiheutettua muutosta nykytilanteen analyysin ja ennustetilanteen kautta. Moniulotteisuutensa myötä sen avulla on nähtävissä suorien kytkösten lisäksi kerrannaisvaikutusten aiheuttamat kytkennät toimialojen ja yritysten välillä.
- Investointi- ja kustannusluokista johdettiin mallin lähtötietoina käytetyt syötteen malliin eri toimialoille kohdistuvasta väli- ja lopputuotekysynnästä yhteensä 173 toimialan (TOL2008) tarkkuudella.

Tulokset

- Akkukennotehdas tulee olemaan uutta lisäarvoa tuottavaa teollista toimintaa Suomessa. Se tulee olemaan merkittävä investointi ja merkittävä työllistäjä sekä itse että kerrannaisvaikutusten kautta muilla toimialoilla.
- Arvoketjun kerrannaisvaikutukset ulottuvat kaikille yhteiskunnan toimialoille mahdollistaen uutta tutkimus- ja kehitystoimintaa Suomessa. Kaikki tämä tukee kiertotaloutta ja hiilineutraalia liikkumista tulevaisuudessa.



- Akkukennotehtaan rakentamisen aikana kumulatiivisesti Suomessa:
 - Työvoimatarve on noin **20 100** henkilötyövuotta
 - Kokonaistuotos on noin **3,6** miljardia euroa
 - Investointeja syntyy noin **277** miljoonan euron edestä
 - Bruttokansantuote kasvaa noin **1,6** miljardia euroa
 - Veroja kertyy noin **714** miljoonaa euroa
- Akkukennotehtaan käytön aikana vuosittain Suomessa:
 - Työvoimatarve on noin **14 200** henkilötyövuotta
 - Kokonaistuotos on noin **6,2** miljardia euroa
 - Investointeja syntyy noin **446** miljoonan euron edestä
 - Bruttokansantuote on noin **1,5** miljardia euroa
 - Veroja kertyy noin **667** miljoonaa euroa

BACKGROUND AND OBJECTIVE

Finland is currently the only significant producer of raw materials for lithium-ion batteries in Europe which introduces an excellent opportunity to build and further develop battery value chain. This provides a chance to serve as a major supplier to one or more European automakers.

Finland has to offer:

- secured access to high-quality and sustainable raw materials.
- opportunities for investments and long-term partnerships with the state-owned company Finnish Minerals Group
- politically stable operational environment
- access to skilled workforce
- strong R&D expertise
- excellent knowledge in chemistry, process engineering and raw materials
- low-carbon and affordable energy
- rapidly evolving ecosystem in the battery industry

Investments in the operations of the battery value chain in Finland will have significant regional economic impacts. This study assesses the direct regional economic impacts of the planned battery cell plant in Kotka, the multiplicative impacts of production and consumption resulting from the planned activities in Finland. During the construction and upon completion of the battery cell factory the demand for labour force in Finland is expected to increase significantly. The workforce required for the construction and operation of the battery cell factory cannot be entirely met by domestic expertise and labour in the current situation. However, proactive response and appropriate measures can enable Finland to meet the future demands.

This assessment serves as the second update to the 2019 evaluation of the economic impacts of the battery value chain (Savikko et al., 2019) with more precise baseline data. The 2019 assessment covered the economic impacts of precursor (pCAM), cathode active material (CAM), and battery cell (CELL) plants. The first update to the 2019 report, completed in 2022, assessed the impacts of the precursor and cathode active material factories.

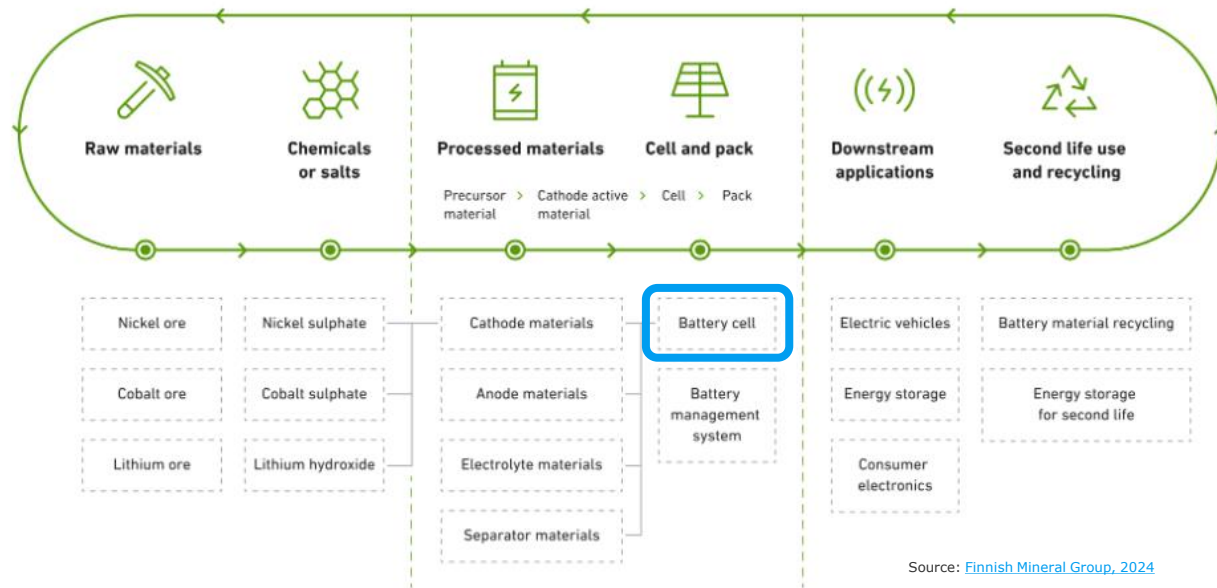
The recent modelling differs from the previous one not only in terms of scope (CELL) and location of the facility but also in the scale and distribution of investment and costs. Additionally, the new modelling incorporates updated economic interactions within the Finnish economy.

BACKGROUND AND OBJECTIVE

impacts were modelled separately for the construction phase and the operational phase. The construction period was considered as a single entity in terms of time, although construction spans slightly different phases and takes more than a year. The operational period was assessed for a duration of one year and reflects the stabilized operation as per the plans in place at the time of the assessment. All impacts were evaluated at current prices.

In the assessment, the focus was on the **economic impacts within Finland**, which means that the results do not include the procurement of raw materials and services from abroad.

The analysis was limited to the highlighted section of the battery value chain shown in the figure below.

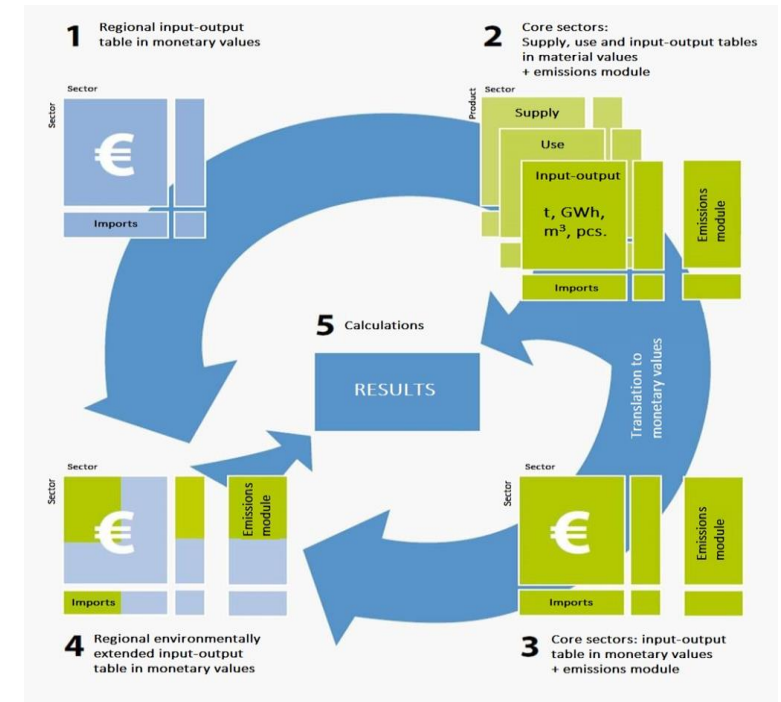


The results were modelled using the resource flow model developed by Ramboll under the commission of Sitra.

RESOURCE FLOW MODEL

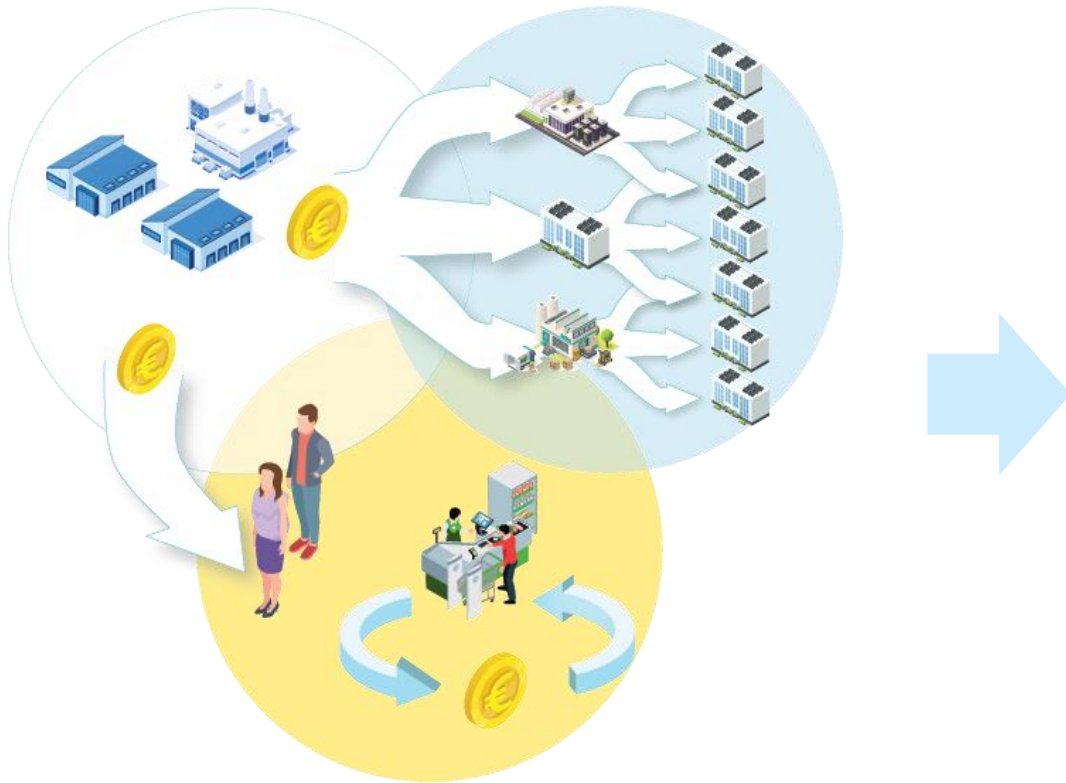
APPROACH TO ESTIMATE REGIONAL ECONOMIC IMPACTS

- Foundation for our approach to socioeconomic and regional economic impact assessment was created in co-operation of Ramboll Finland and the Natural Resources Institute of Finland (Luke) by the commission of Sitra in 2013 – 2015. This resulted in the creation of the resource flow model. Since then, the model has been continuously developed, partially reworked and updated with most recent statistics.
- The model expresses how monetary flows are channelled into production in the region, between industries for intermediate product use and consumption (private and public) and as exports out of the region.
- The model is two-parted as it displays the impacts as change between current state (BAU) and forecast state (after introducing the impacts on the economy). Due to the model's multidimensional nature it also captures the impacts from multiplicative effect between industries and organizations in addition to the direct impacts.



RESOURCE FLOW MODEL

MATERIAL AND IMMATERIAL RESOURCE FLOWS



Direct and indirect impacts at the value chain level due to production and consumption.
In the current situation and after change.

- Output
- Value added
- Employment
- Investments
- Taxes
- Gross domestic product

DEFINITIONS

Direct impacts refer to the impacts that concern the immediate activities of the procurement organization during the construction phase and the operation of the battery cell plant.

Multiplicative impacts from production are impacts on other industries that result from the direct activities concerning the construction and operation of the battery cell plant. In practical terms, this means that in order to facilitate the production of the battery plant goods, services, and raw materials are needed in the upstream value chain, thereby generating demand for other sectors.

Multiplicative impacts from consumption describe the new consumption arising from increased wage compensation as new economic activity is required to satisfy it. The consumption multiplicative impacts are taken into account at both regional and national levels.

Total output is a term utilized in national accounting that represents the overall economic value of production. In business accounting the equivalent term is revenue or turnover, signifying the total monetary value obtained by a company from selling its products or services.

Value added refers to the value created by a unit participating in production. In market production, it is calculated by subtracting the intermediate inputs (goods and services) used in production from the unit's output. In non-market production, it is calculated by summing up compensation of employees, consumption of fixed capital and any production and import taxes. Value added represents the portion of a company's production on which value-added tax is paid.

Employment, as defined in this report employment refers to gross employment which is measured by Full-Time Equivalents (FTE). FTE combines part-time workers or those employed for shorter periods to represent a full-time role. This means that, for example, two half-time workers or two workers employed for half-year are counted as one full person-year.

Investments describe the new investments made by companies to establish and sustain their own production.

Intermediate consumption is a term utilized in national accounting that corresponds to business expenses. In practice it encompasses the deductions from revenue for material and service expenditures as well as product taxes and subsidies.

Precursor (pCAM) refers to the precursor of cathode active material (CAM).

DEFINITIONS

Gross Domestic Product (GDP) is a central concept in national accounting which illustrates the total production value of a country or region. The total output value refers to the sum of value-added generated across the entire national economy. The country's GDP is shaped by all activities within its economic territory that generates income and produces goods or services. The gross value added generated collectively by all producers forms the basic gross value added at current prices across the national economy. When total product taxes calculated at the national level are added to the basic gross value added and the the total product subsidies calculated at the national level are subtracted, the result is GDP at market prices, which is the internationally utilized GDP.

Tax revenues in the assessment include: 1) Product taxes and other production-related taxes, which are paid to the state, 2) Municipal taxes, which are paid to the municipalities where the employees reside, 3) Value-added taxes, which are paid to the state, 4) Corporation taxes, of which about a quarter are paid to the municipalities and about three-quarters to the state, 5) Property taxes, which are paid to the municipalities where the properties are located, 6) Income taxes which are paid to the state.

Product and production taxes consist of compulsory, non-reciprocal payments, either in monetary or in-kind form, paid for production, importation of goods and services, use of labour, ownership, or use of land, buildings, or other assets used in production. These taxes must be paid, regardless of whether the activity is profitable or not.

Municipal tax is levied on the earned income of the taxpayer. The taxpayer pays municipal tax to the municipality that was their municipality of residence on the last day of the year preceding the tax year. Municipal tax varies by municipality, and the amount of municipal tax is determined by the municipality.

Value-added tax is a consumption tax levied on the buyer each time a good or service is sold. The seller adds the value-added tax (VAT) to the price of the goods or services and remits the VAT collected from their sales to the state.

Corporation tax refers to the tax imposed on a company's profits. The revenue from corporation tax is divided between the state and municipalities, with the state's share being about three-quarters and the municipalities' share about one-quarter.

Property tax is a tax based on the value of land and buildings, remitted by the Tax Administration to the municipality where the property is located. The property tax rate is determined by the municipality.

Income tax refers to the taxes levied by the state on individuals' earned income and capital gains.

THE MODELLING INPUTS AND SPECIFICITIES

Construction phase

- The modelling was based on the information provided by Finnish Minerals Group on the investments of constructing the battery cell plant and the labour requirements.
- Slightly less than two-thirds of the direct investments are allocated within the Finnish economy, while the remainder goes abroad.
- The investment categories provided the basis for inputs used in the model concerning intermediate and final product demand across a total of 173 industries (according to TOL2008 classification).
- During the construction phase, there's no actual production of final goods (except for completed facilities).
- Construction creates a temporary impact on the national economy (the construction period), but the operation of the facilities leads to structural changes in the national economy.

Operational phase

- The modelling was based on the data provided by Finnish Minerals Group on the production, costs and labour requirements of operating the battery cell plant.
- Overall, slightly less than half of the direct costs are allocated within the Finnish economy with the rest going abroad.
- From cost categories inputs used in the model, concerning intermediate and final demand across a total of 173 industries (according to TOL2008 classification), were derived.
- In the modelled scenarios, the final products of the battery cell plant are likely to be sold abroad. The plant utilizes, as intermediate inputs in its production, materials from a nearby CAM (cathode active material) plant, which in turn uses intermediate inputs from a nearby pCAM (precursor) plant. However, not all the CAM material required for the battery cell production come from the nearby facility.

Impacts were assessed in current prices, and the modelling inputs were based on the price levels and costs of the year 2023. If the costs (including raw materials, etc.) of constructing and operating the battery cell plant as well as the economic relationship, undergo significant changes in the near future, this will impact the scale of investment, the distribution of construction and operational costs, and subsequently, the economic impacts resulting from the operations.

RESULTS CONSTRUCTION

THE CUMULATIVE IMPACTS OF CONSTRUCTION PHASE

Overall, the total investments required for the constructing the battery cell plant amount to nearly 5 billion euros.

Construction time was considered as a single entity in terms of time (cumulative impacts). In reality, construction is divided into different phases.

The economic impacts generated during construction are divided into

- direct impacts (developer/project organization),
- multiplicative impacts of production, and
- multiplicative impacts of consumption.
- The multiplicative impacts proportion of economic impacts varies based on the observed variable and across industries.

The impacts describe impacts to Finland. If the required Finnish experts (e.g., builders, technicians) to make the project happen are engaged in other projects when construction begins, it's likely that foreign expertise will be utilized more than initially estimated.

The impacts were assessed at current prices and the modelling inputs were based on the price levels and costs of the year 2023.

The economic impacts during the construction of the battery cell plant (investment of nearly 5 billion euros)

Labour Demand



Increases and is approximately **20 117** person-years

- Direct impacts 60 FTE
- Production multiplicative impacts 14 722 FTE
- Consumption multiplicative impacts 5 335 FTE

Total Output



Increases by **3,6 B€**

- Production multiplicative impacts 2 681 M€
- Consumption multiplicative impacts 877 M€

Value Added



Increases by **1,5 B€**

- Production multiplicative impacts 1 067 M€
- Consumption multiplicative impacts 425 M€

Investments



5,1 B€

- Direct impacts nearly 4 800 M€
- Production multiplicative impacts 134 M€
- Consumption multiplicative impacts 143 M€

Gross Domestic Product



1,6 B€

- Share of Finland's GDP of year 2022 approximately 0,58%

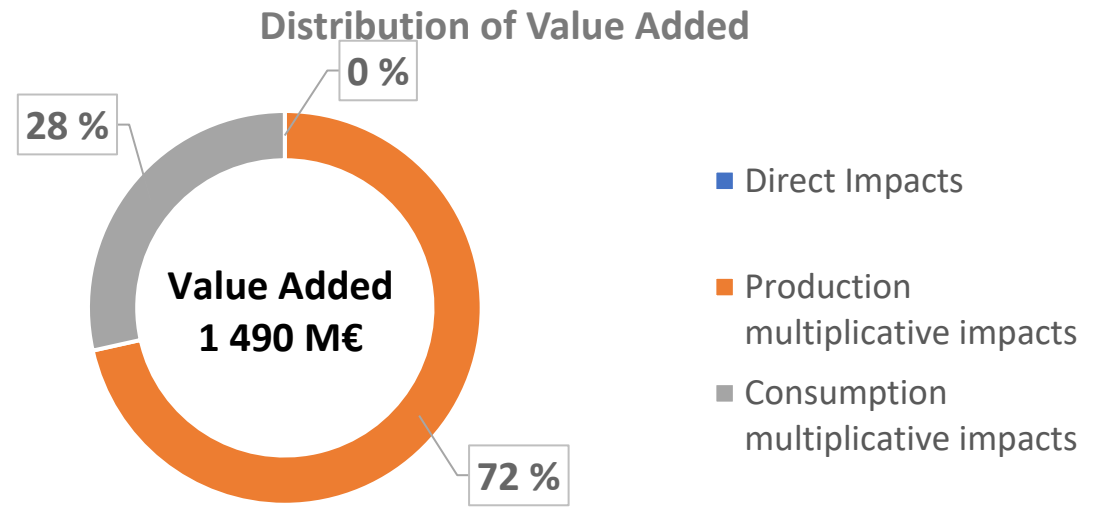
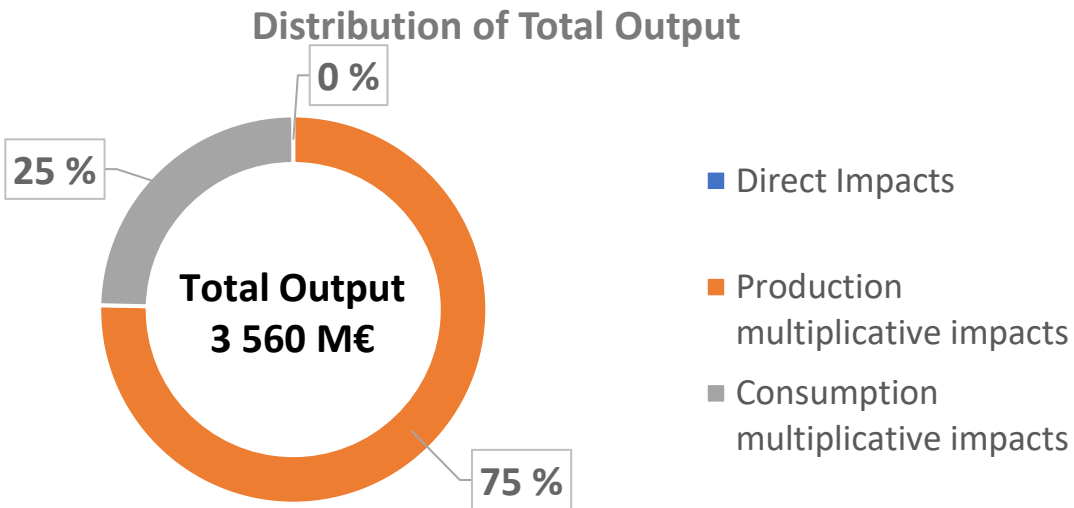
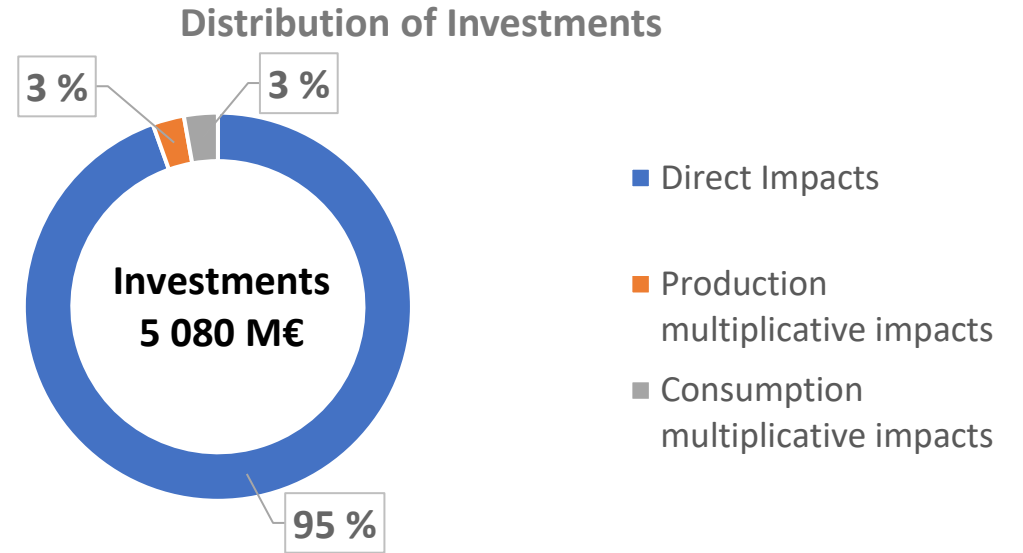
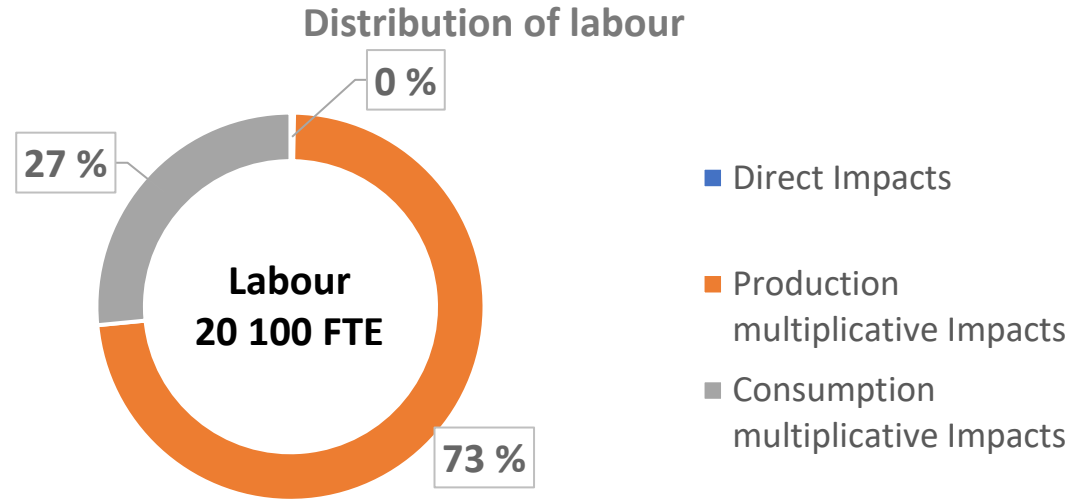
Taxes



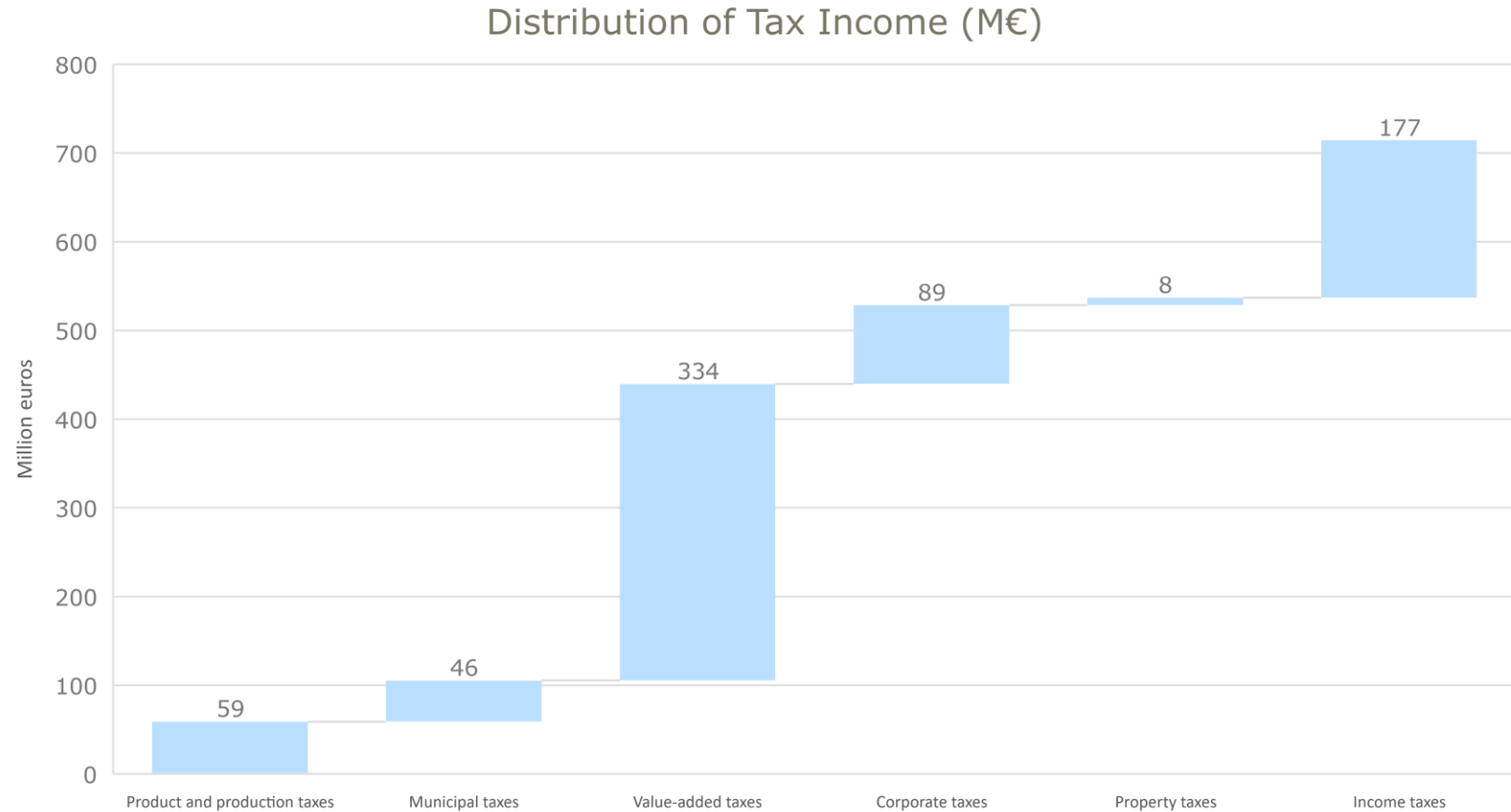
Total tax revenues **714 M€**

- Corporate taxes 89 M€
- Property taxes 8 M€
- Municipal tax 46 M€
- Value-added tax 334 M€
- Product and production tax 59 M€
- Income taxes 177 M€

THE CUMULATIVE IMPACTS OF CONSTRUCTION PHASE



THE CUMULATIVE IMPACTS OF CONSTRUCTION PHASE

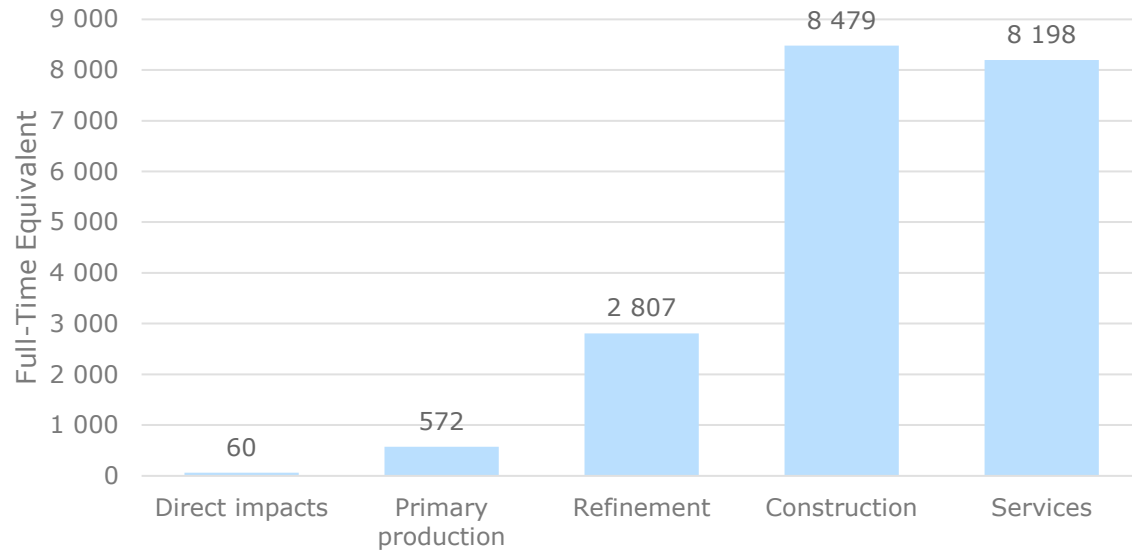


TAXES
714 M€

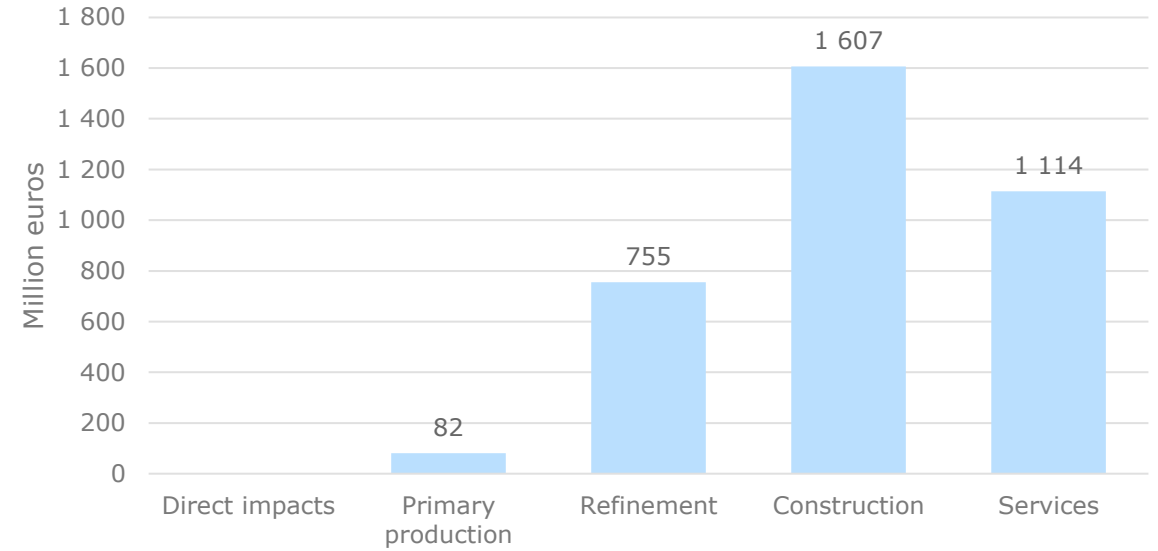
* In the graph income taxes (state) include the share of taxes directed to wellbeing services counties which were previously paid as a part of municipal taxes.

THE CUMULATIVE IMPACTS OF CONSTRUCTION PHASE

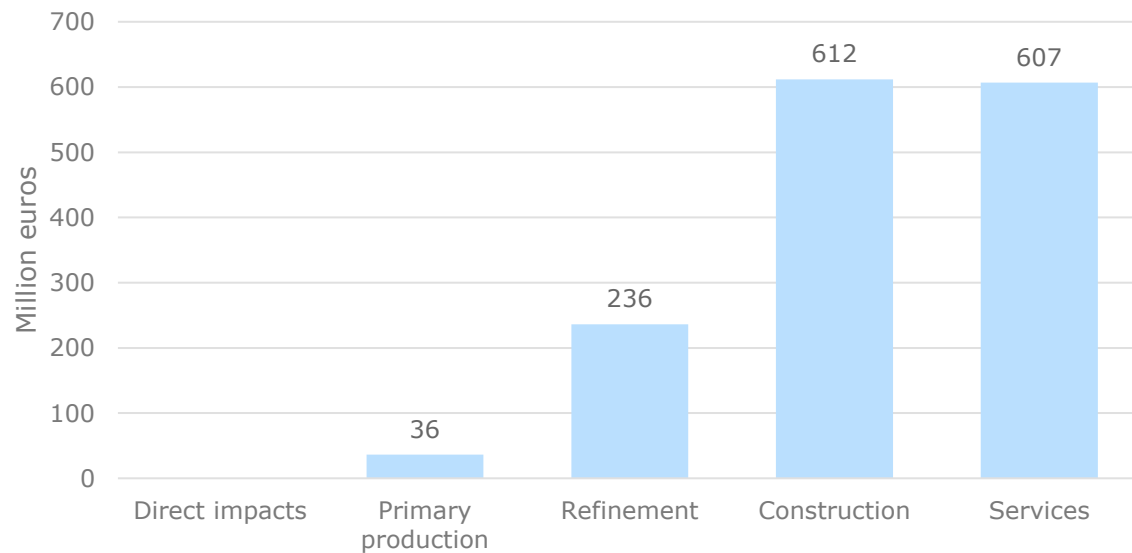
Labour demand during construction, FTE



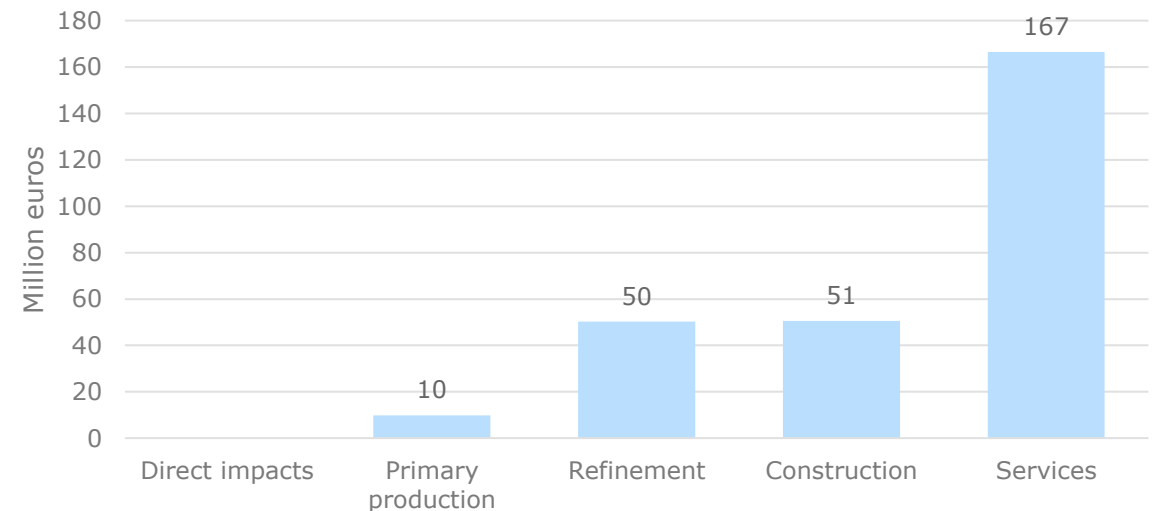
Total output during construction, M€



Value added during construction, M€



Investments during construction, M€ (excluding the direct investment)



RESULTS OPERATION

THE ANNUAL IMPACTS DURING OPERATION PHASE

- In total, the annual operational costs of the battery cell plant (60 GWh/a) amount to over 3 billion euros per year.
- The operational period was assessed as a stabilized operation on an annual basis. Hence, the lifetime impacts on current prices can be calculated by multiplying the average annual impacts by the expected lifespan of the facilities.

The economic impacts generated during operation are divided into

- direct impacts,
- multiplicative impacts on production, and
- multiplicative impacts on consumption.
- The multiplicative impacts proportion of economic impacts varies based on the observed variable and across industries.
- The impacts were assessed at current prices, and the modelling inputs were based on the price levels and costs of the year 2023.
- Some of the impacts during operation affect existing operations.
 - These describe impacts that occur regardless of the new production plants operations (e.g., when purchasing raw materials from suppliers who produce and sell the same amount of these materials onward, regardless of new purchase, meaning the procurement doesn't affect the existing operational volume).

The annual economic impacts during the operation of the battery cell plant

Workforce Demand



In the value chain is approximately **14 220** person-years

- Direct impacts 3 113 FTE
- Production multiplicative impacts 6 914 FTE
- Consumption multiplicative impacts 4 193 FTE



- Existing workforce 4 323 FTE
 - Production multiplicative impacts 3 063 FTE
 - Consumption multiplicative impacts 1 259 FTE
- New workforce demand 9 898 FTE
 - Direct impacts 3 113 FTE
 - Production multiplicative impacts 3 851 FTE
 - Consumption multiplicative impacts 2 934 FTE

Total Output



In the value chain is approximately **6,2 B€**

- Direct impacts 3 350 M€
- Production multiplicative impacts 2 146 M€
- Consumption multiplicative impacts 689 M€



- Existing total output 1 331 M€
 - Production multiplicative impacts 1124 M€
 - Consumption multiplicative impacts 207 M€
- New total output 4 853 M€
 - Direct impacts 3 350 M€
 - Production multiplicative impacts 1 022 M€
 - Consumption multiplicative impacts 482 M€

Value Added



In the value chain is approximately **1,4 B€**

- Direct impacts 368 M€
- Production multiplicative impacts 681 M€
- Consumption multiplicative impacts 334 M€



- Existing value added 416 M€
 - Production multiplicative impacts 307 M€
 - Consumption multiplicative impacts 109 M€
- New value added 966 M€
 - Direct impacts 368 M€
 - Production multiplicative impacts 374 M€
 - Consumption multiplicative impacts 225 M€

Investments



In the value chain is approximately **446 M€**

- Direct impacts 138 M€
- Production multiplicative impacts 196 M€
- Consumption multiplicative impacts 112 M€



- Investments made regardless of the new activity 134 M€
 - Production multiplicative impacts 101 M€
 - Consumption multiplicative impacts 34 M€
- New investments 312 M€
 - Direct impacts 138 M€
 - Production multiplicative impacts 96 M€
 - Consumption multiplicative impacts 79 M€

Gross Domestic Product



In the value chain is approximately **1,5 B€**

- Share of Finland's GDP of year 2022: approximately 0,56%



- GDP arising regardless of the new activity 404 M€
 - Share of Finland's GDP of year 2022: approximately 0,15 %
- New GDP 1 086 M€
 - Share of Finland's GDP of year 2022: approximately 0,40 %

Taxes



In the value chain are approximately **667 M€**

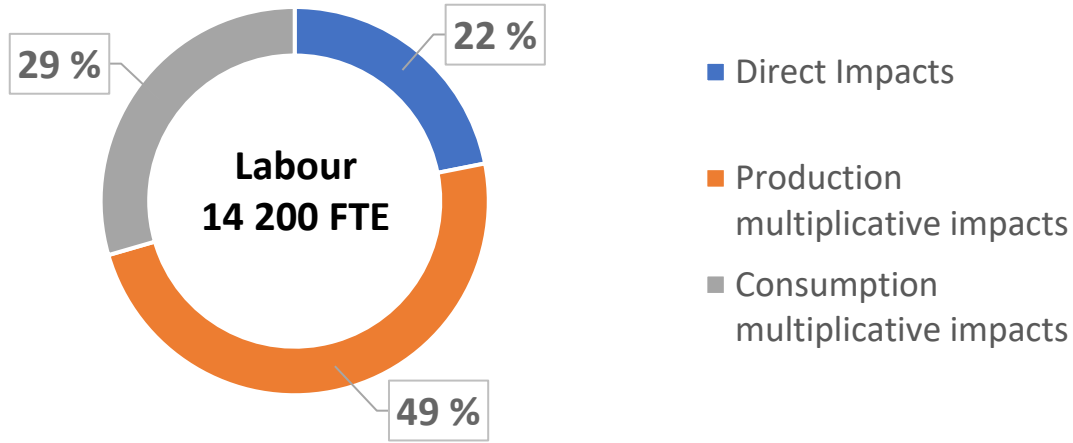
- Corporate taxes 72 M€
- Property taxes 15 M€
- Municipal taxes 36 M€
- Value-added taxes 296 M€
- Product and production taxes 107 M€
- Income taxes 139 M€



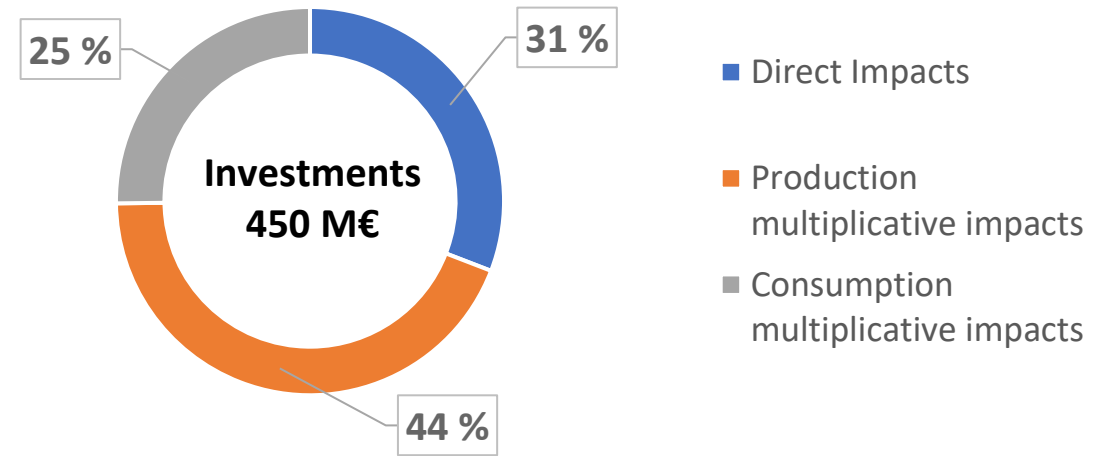
- Taxes paid regardless of the new activity 172 M€
- New taxes 495 M€
 - Corporate taxes 61 M€
 - Property taxes 11 M€
 - Municipal taxes 25 M€
 - Value-added taxes 218 M€
 - Product and production taxes 82 M€
 - Income taxes 98 M€

THE ANNUAL IMPACTS DURING OPERATION PHASE

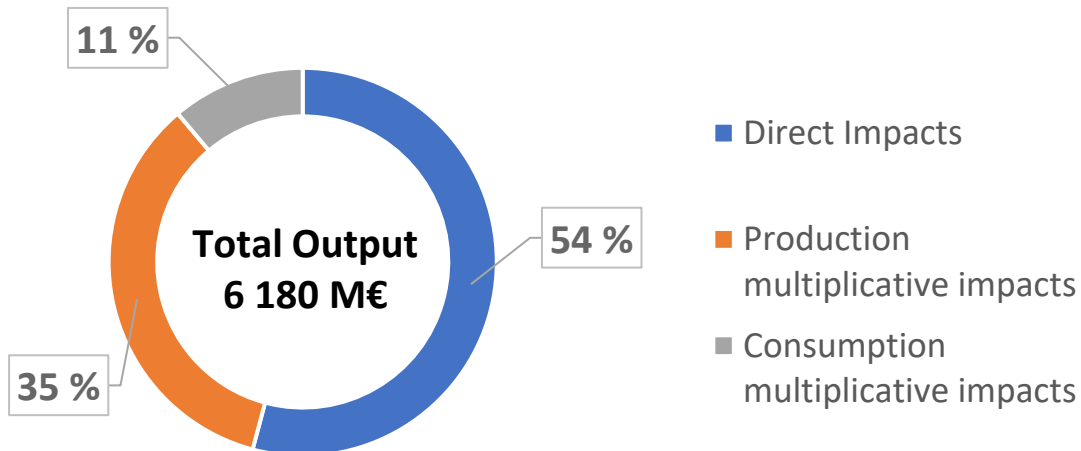
Distribution of Labour



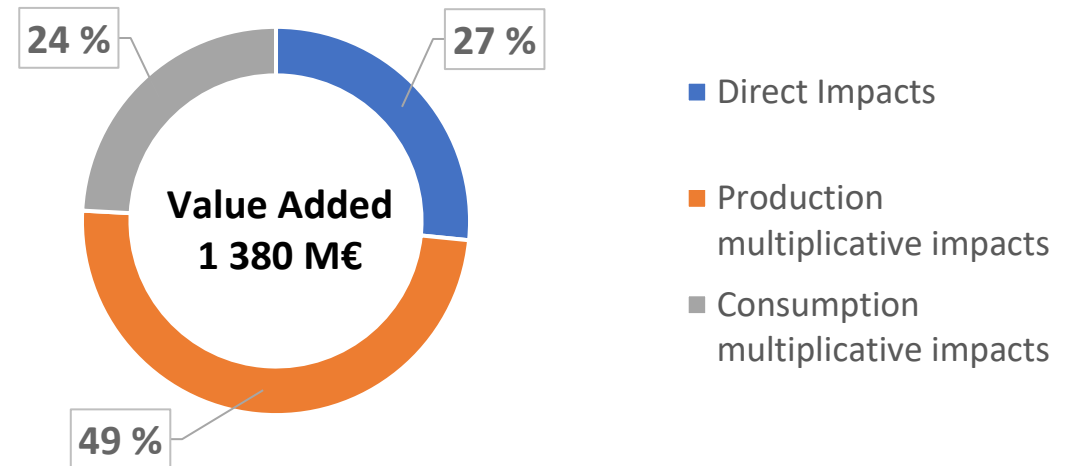
Distribution of Investments



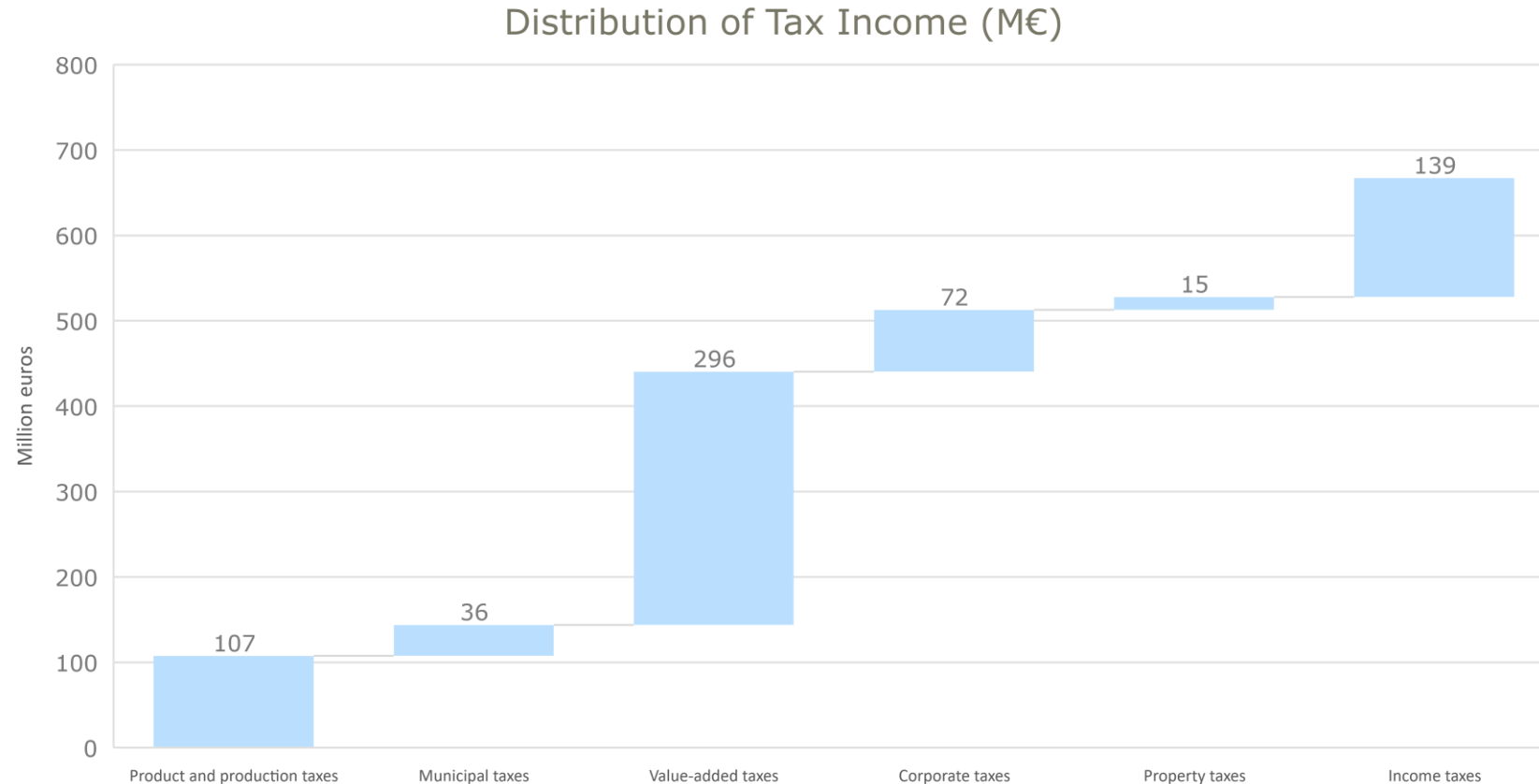
Distribution of Total Output



Distribution of Value Added



THE ANNUAL IMPACTS DURING OPERATION PHASE



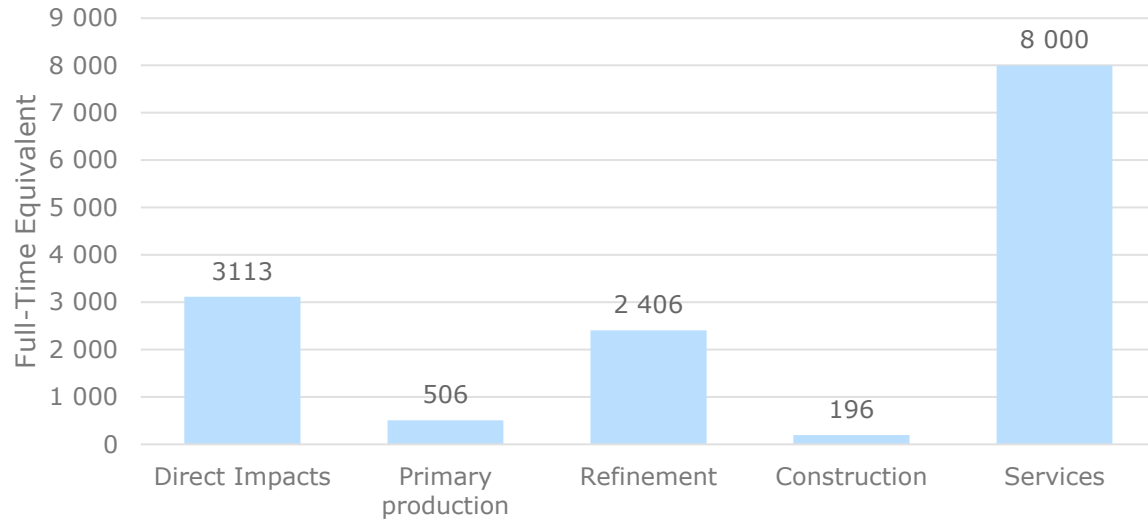
**TAXES
667 M€
PER
YEAR**

In the assessment, the theoretical amount of value-added taxes has been calculated, where the tax amount is determined based on the national accounts value-added and the sector-specific value-added tax rates. By this logic, the value-added tax is calculated for each sector using the corresponding value-added tax rate in relation to the value-added generated in that sector. However, the amount of value-added taxes actually remitted to the state is also influenced by where the produced goods are sold. In that case, a portion of the value-added tax collection is paid to the destination country, potentially resulting in remitted value-added taxes being lower than estimated tax revenues. Additionally, the final value-added tax collection is affected by the right to deduct value-added taxes. The modelling does not take a stance on where the final products go, and in the assessment the theoretical value-added tax amount throughout the entire value chain was calculated.

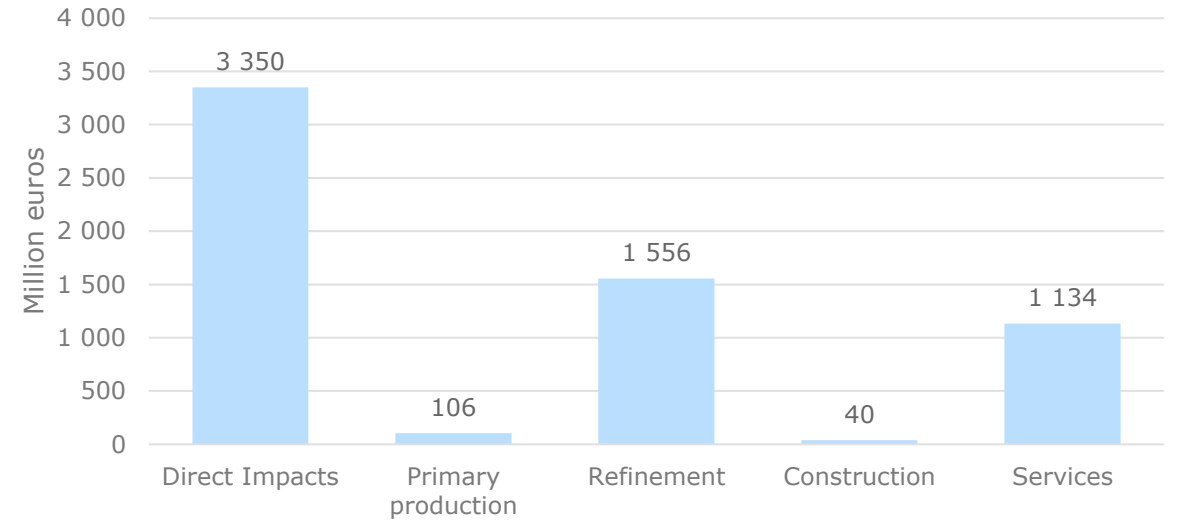
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THE ANNUAL IMPACTS DURING OPERATION PHASE

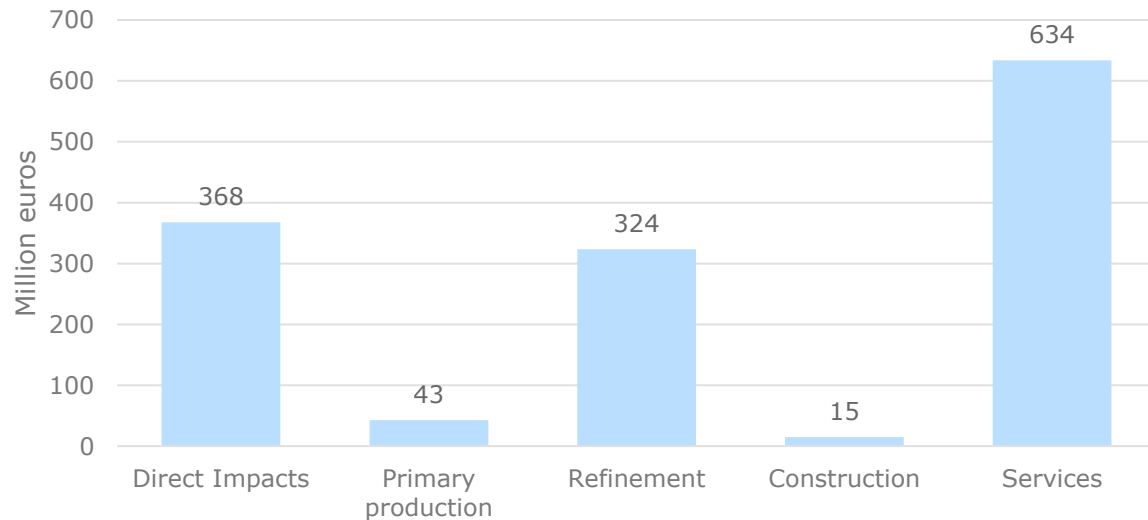
Annual workforce demand during operation, FTE



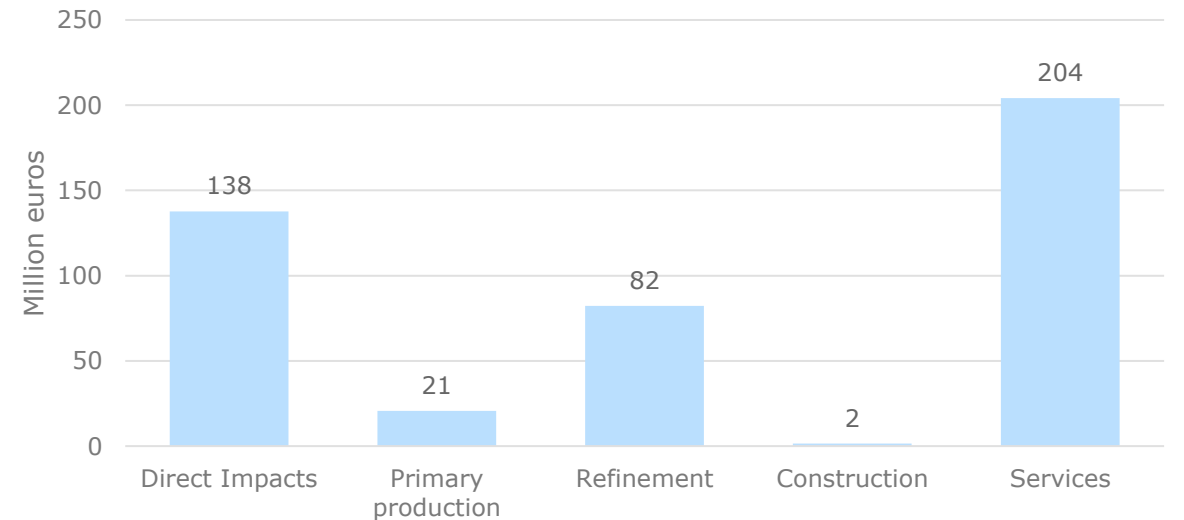
Annual total output during operation, M€



Annual value added during operation, M€

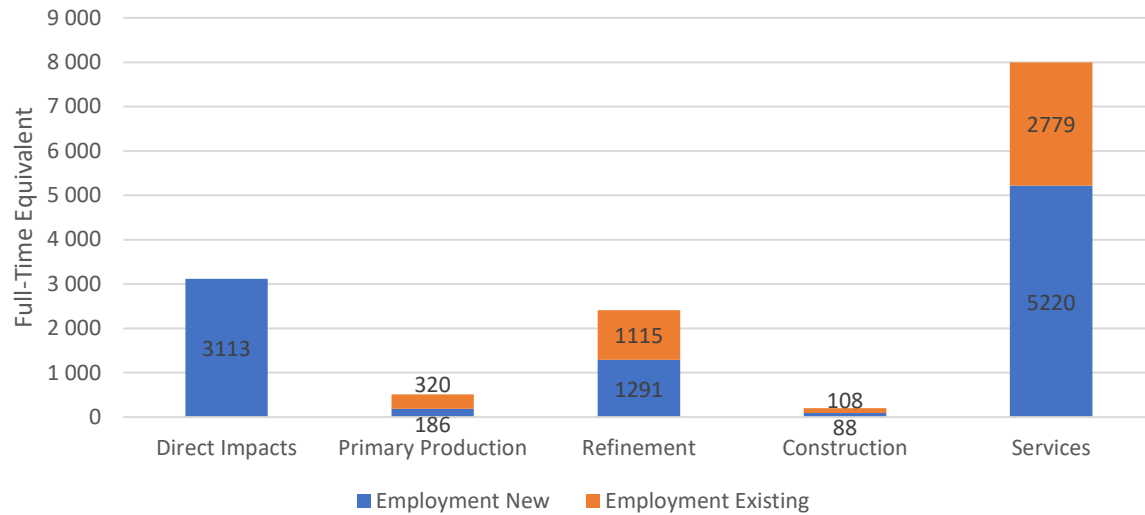


Annual investments during operation, M€

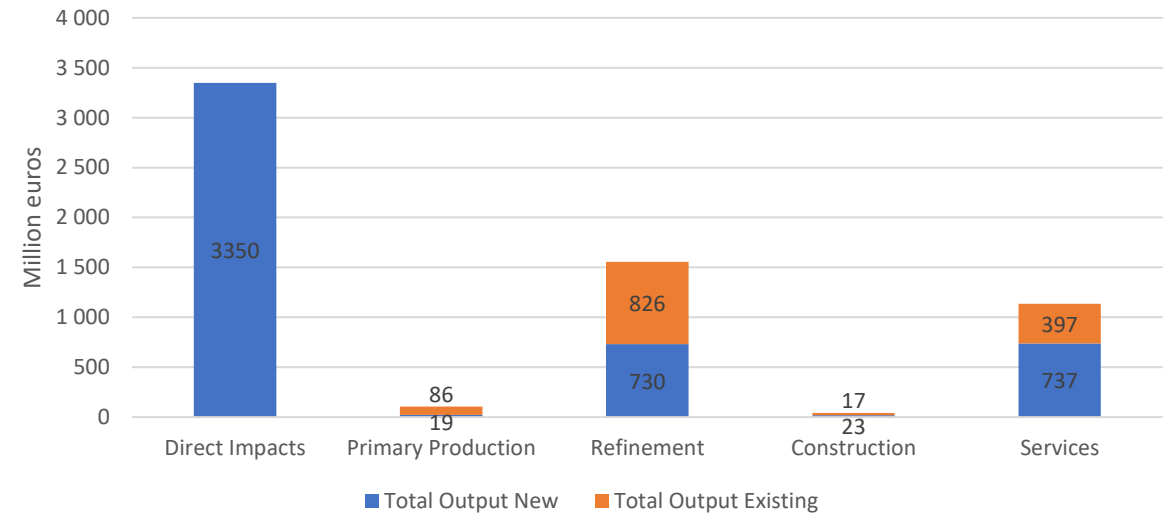


THE ANNUAL IMPACTS DURING OPERATION PHASE

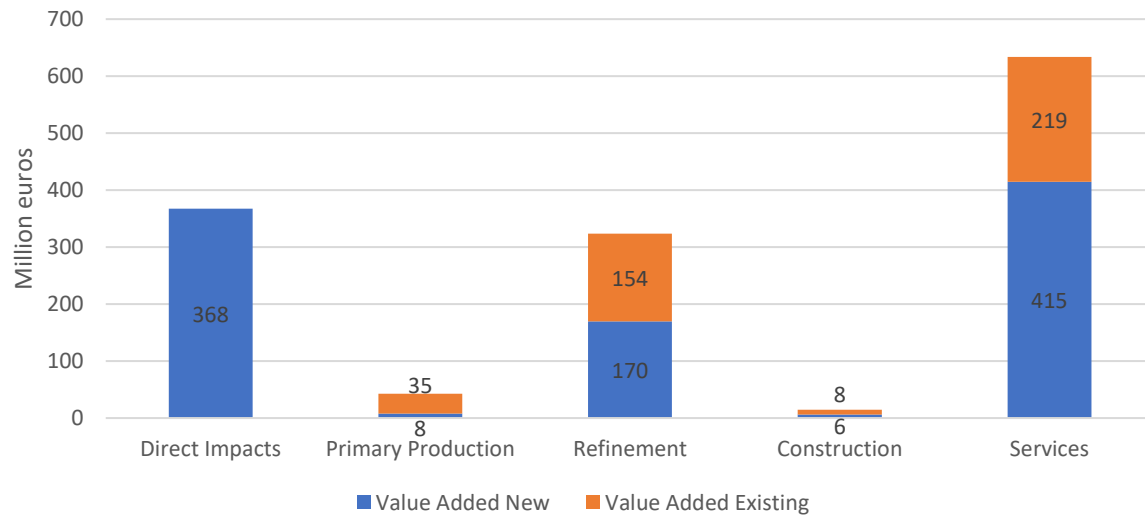
Annual demand for labour during operation, FTE



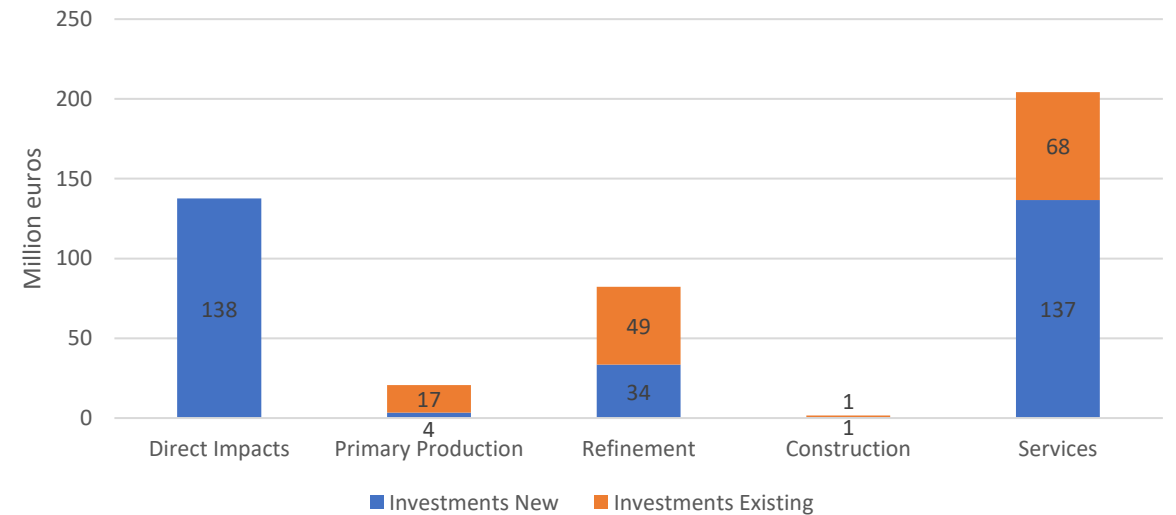
Annual total output during operation, M€



Annual value added during operation, M€



Annual investments during operation, M€



CONCLUSIONS

- The battery cell plant will constitute a new value-adding industrial operation in Finland. It will be a significant investment and a substantial employer both itself and through its multiplicative impacts across other sectors. The multiplicative impacts will extend to all sectors of society enabling new research and development activities in Finland. All of this contributes to the circular economy and carbon-neutral mobility in the future.
- During construction due to direct and multiplicative impacts of production and consumption a labour demand of approximately 20 117 person-years (FTE) is cumulatively generated in Finland. As a ramification of the initial construction investments (approximately 4,8 billion euros) new investments are generated across the construction project's value chains, totalling to approximately 277 million euros. All of this contributes to a temporary increase of approximately 3,6 billion euros of total output in the national economy of which approximately 1,5 billion euros is value added. Tax revenues during the construction phase amount to approximately 714 million euros.
- Construction of the battery cell plant to Kotka is supported by the other ongoing battery value chain projects far in development in the region, including the construction of a cathode active material plant in Kotka and a precursor material plant in Hamina. These facilities are very beneficial for the battery cell plant as it will use significant amounts of cathode active material in its production. Consequently, the battery cell plant ensures stable future demand for the other planned projects in the area and creates opportunities for others to expand their operation. Battery cell production increases the domestically added value as otherwise the active materials would be exported. Simultaneously sourcing raw materials and intermediate products locally reduces overall costs, carbon footprint, and enhances production's ecological sustainability.

CONCLUSIONS

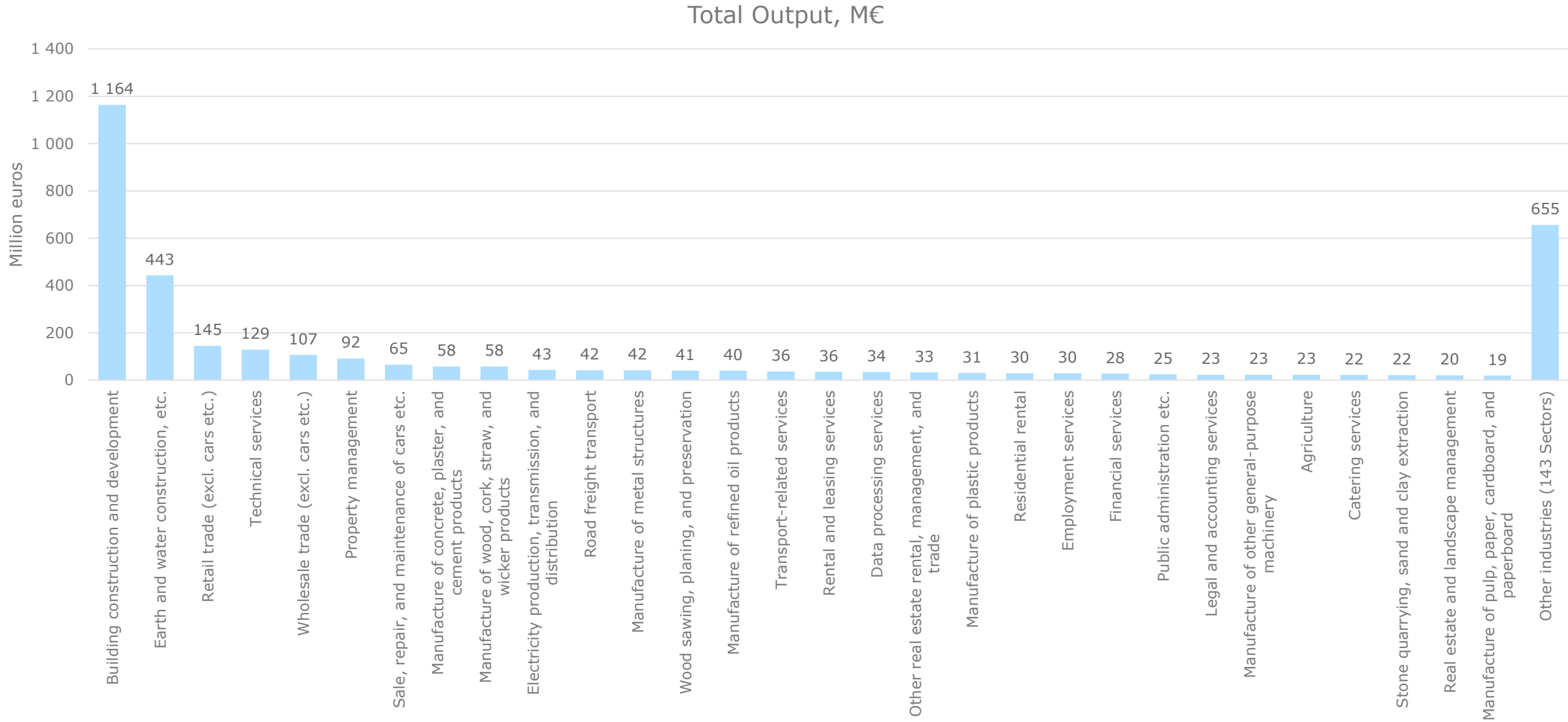
- The battery cell plant will have a lasting impact on the Finnish economy and its economic interactions for years to come. Annually, after completion, the plant will directly employ over 3 000 person-years (FTE) of workforce. Including also the multiplicative impacts the total workforce demand is approximately 14 220 FTEs of which around 70% is new workforce demand. Throughout the operation, the Finnish total output is estimated to increase by approximately 6,2 billion euros of which approximately 1,4 billion euros is value added. Tax revenues during operation are projected to accumulate to roughly 667 million euros annually.
- The impacts stemming from the battery cell plant's operations primarily target service industry and manufacturing sectors. Existing impacts are notably more pronounced in primary production compared to new impacts. However, capturing of all new impacts (including the direct impact) requires growth in Finnish sector-specific expertise in the coming years.
- When constructed the impacts of battery cell production will be visible in the national economy and the GDP is expected to grow by 1,5 billion euros at national level as a result of all impacts within the value chains. This corresponds to approximately 0,56% of Finland's total GDP in 2022. Similarly, during the construction phase, the Finnish economy benefits from a temporary increase in GDP of approximately 1,6 billion euros. This corresponds to 0,58% of Finland's total GDP in 2022.
- Overall impacts, both in terms of GDP and other indicators, may increase if new economic activities emerge in Finland within the production of raw materials, services, and/or equipment used in battery cell and material production before or during the construction and operation of the facilities.

APPENDIX 1

RESULTS

BY INDUSTRY SECTOR

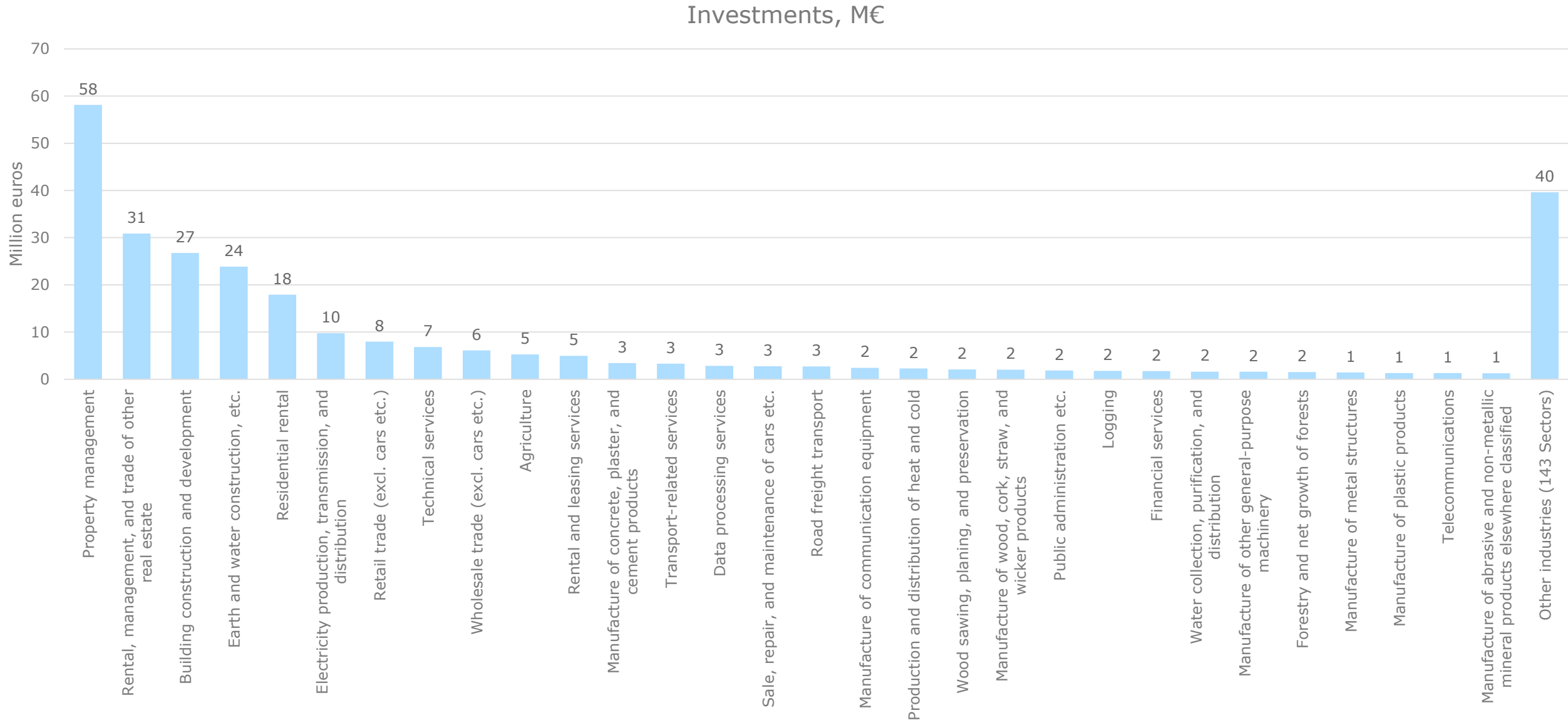
THE CUMULATIVE IMPACTS OF CONSTRUCTION PHASE



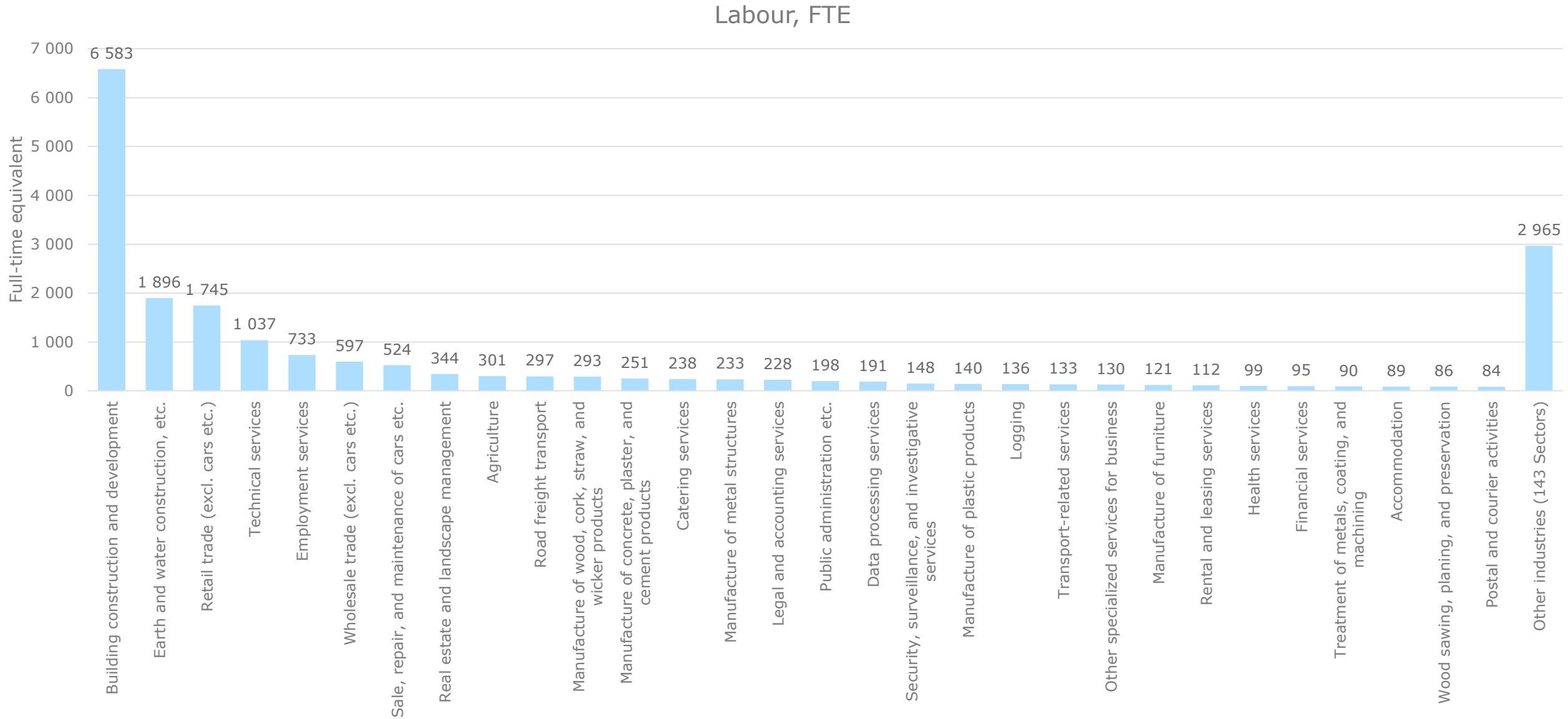
THE CUMULATIVE IMPACTS OF CONSTRUCTION PHASE



THE CUMULATIVE IMPACTS OF CONSTRUCTION PHASE

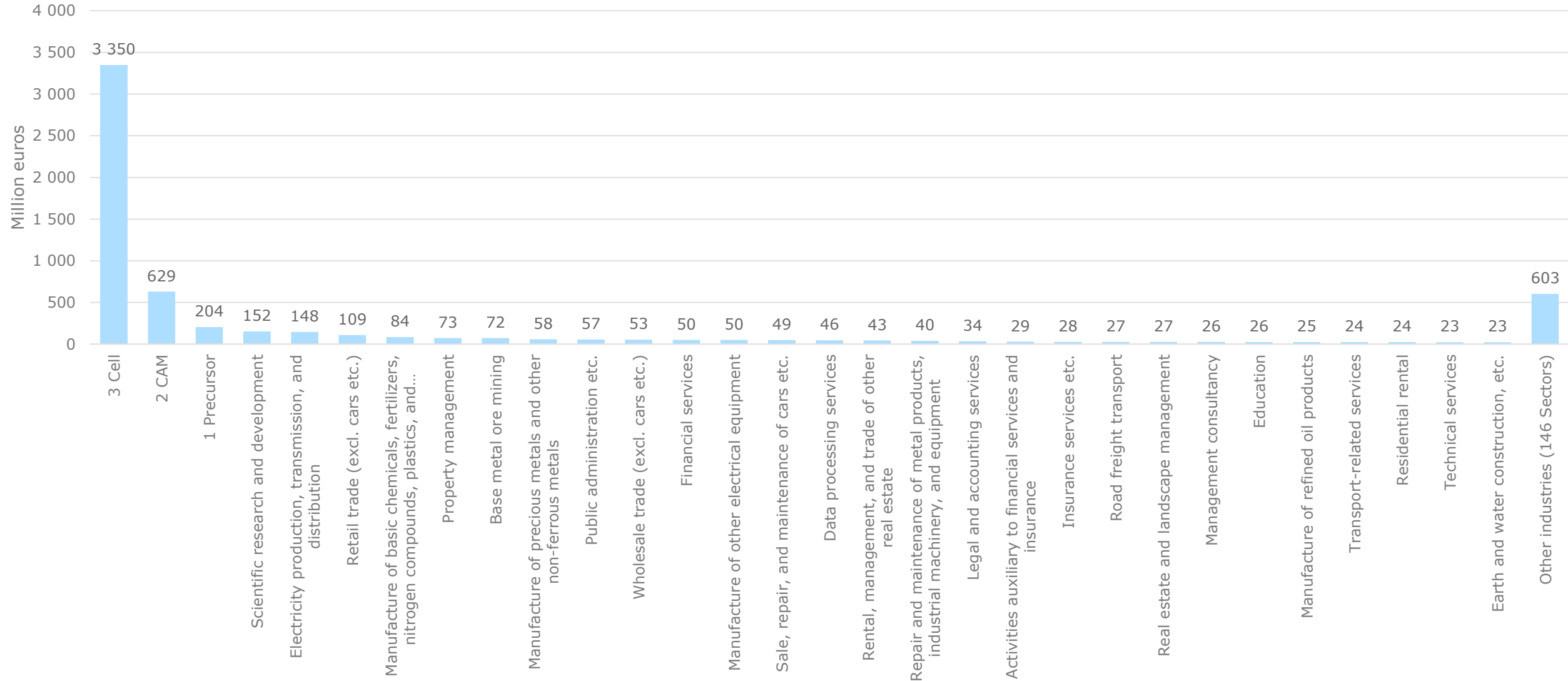


THE CUMULATIVE IMPACTS OF CONSTRUCTION PHASE

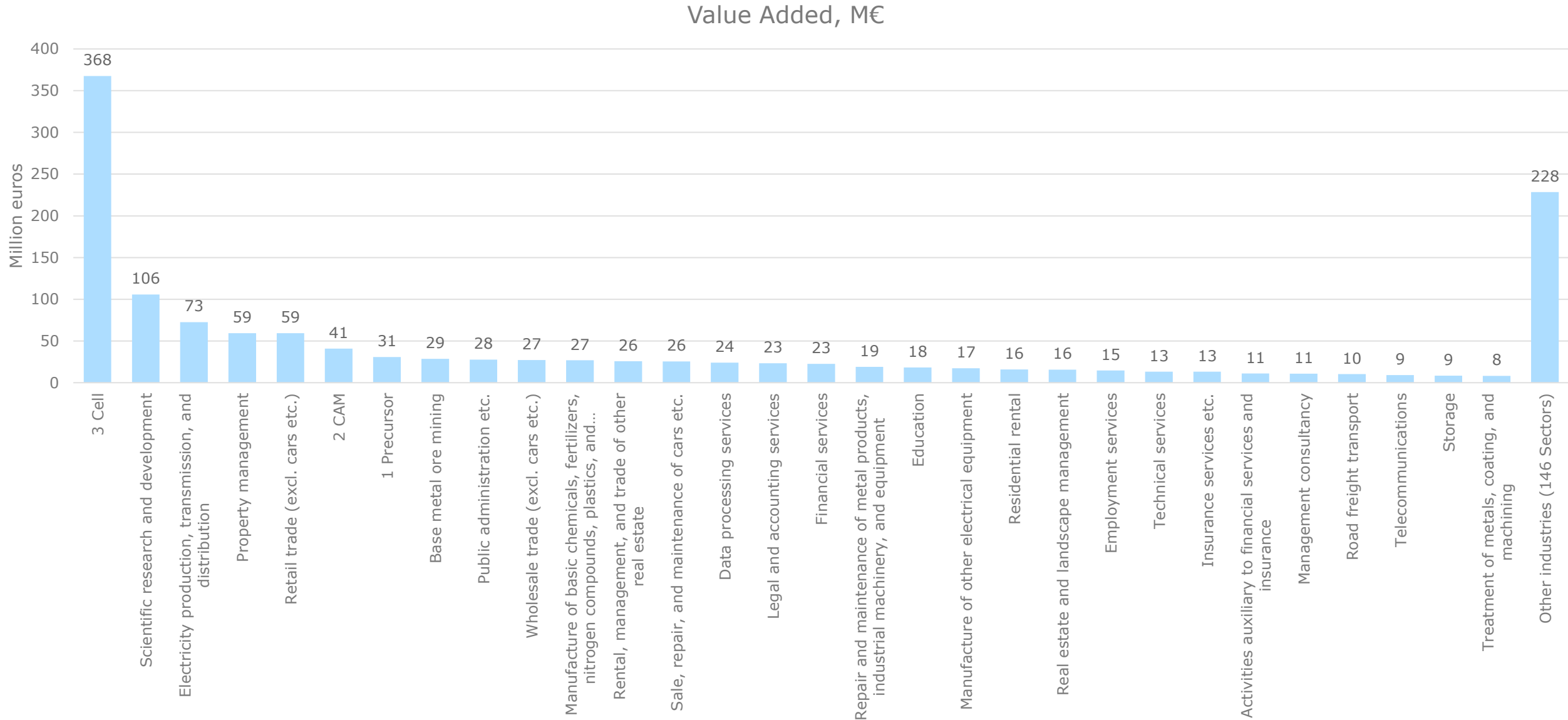


THE ANNUAL IMPACTS DURING OPERATION PHASE

Total Output, M€

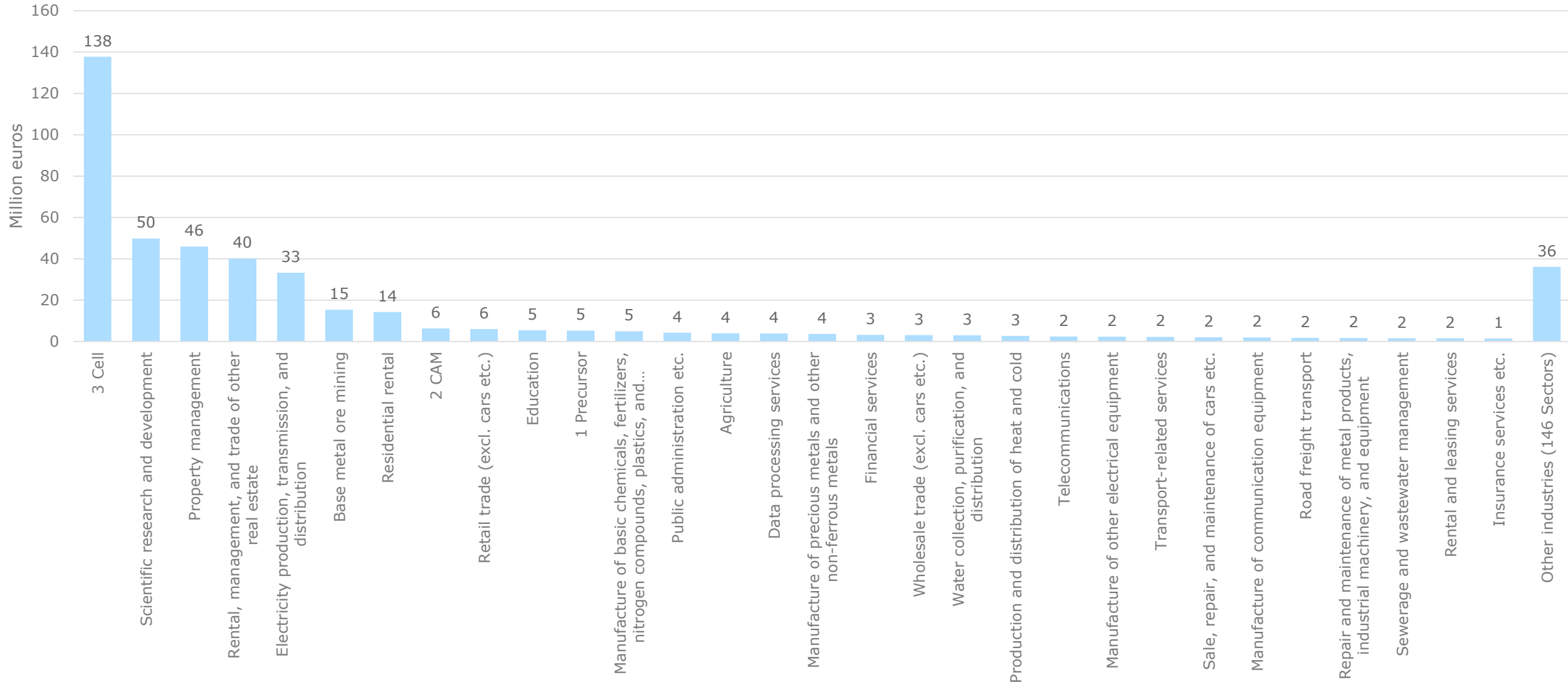


THE ANNUAL IMPACTS DURING OPERATION PHASE



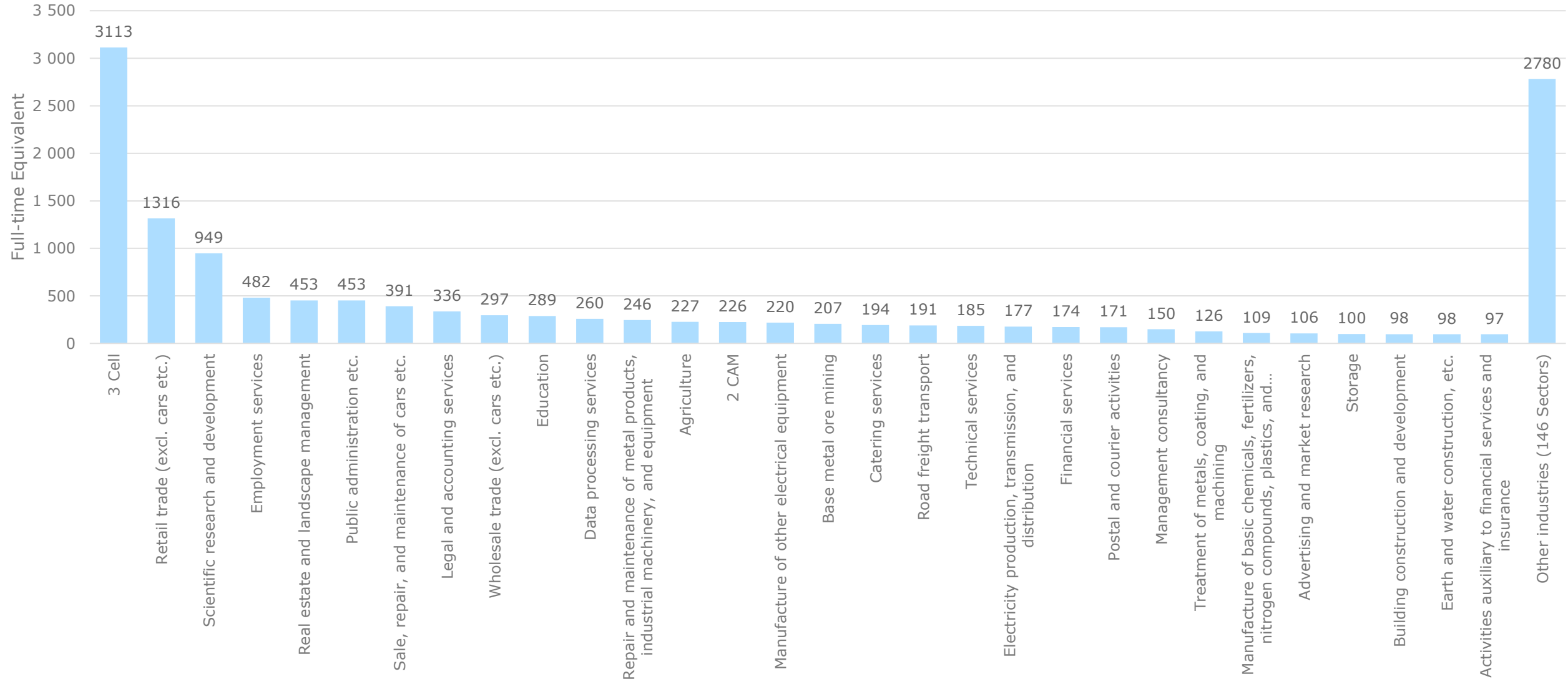
THE ANNUAL IMPACTS DURING OPERATION PHASE

Investments, M€



THE ANNUAL IMPACTS DURING OPERATION PHASE

Labour, FTE



Bright ideas. Sustainable change.

