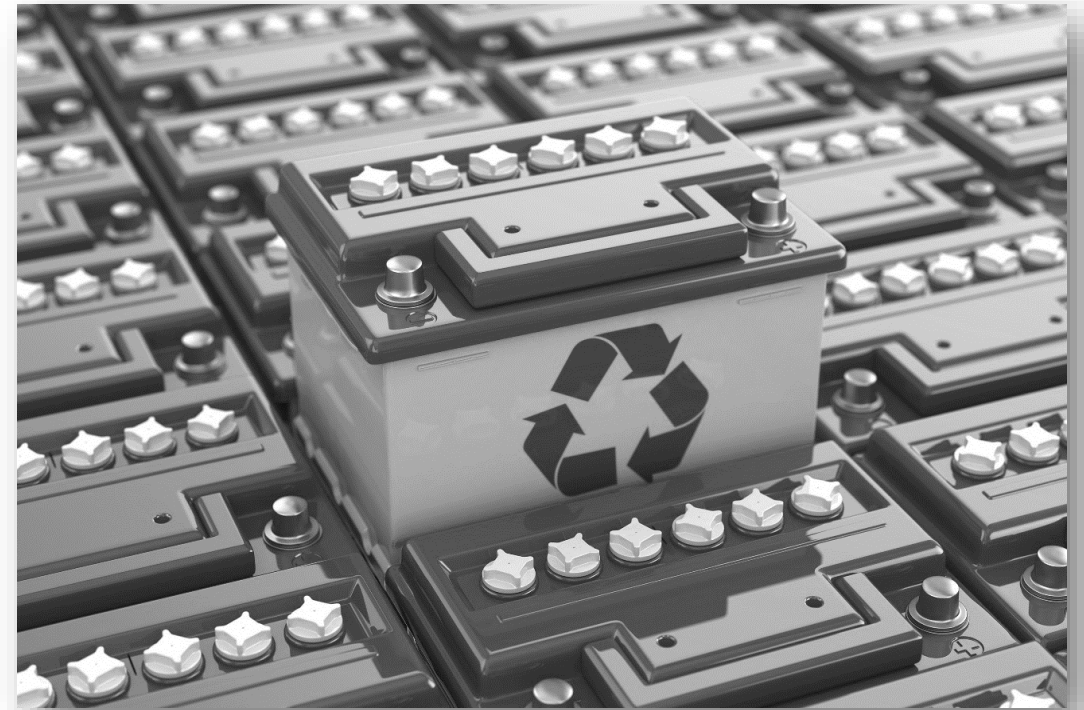


Eurobat Forum

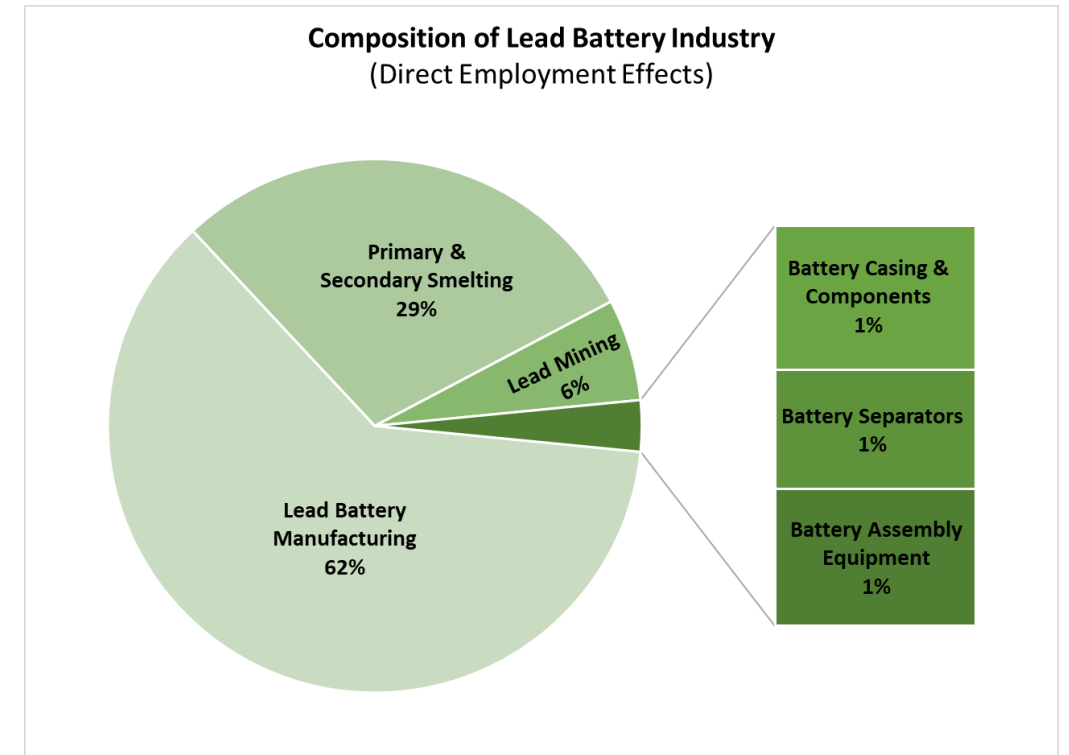
Jun 24, 2022

EBP 

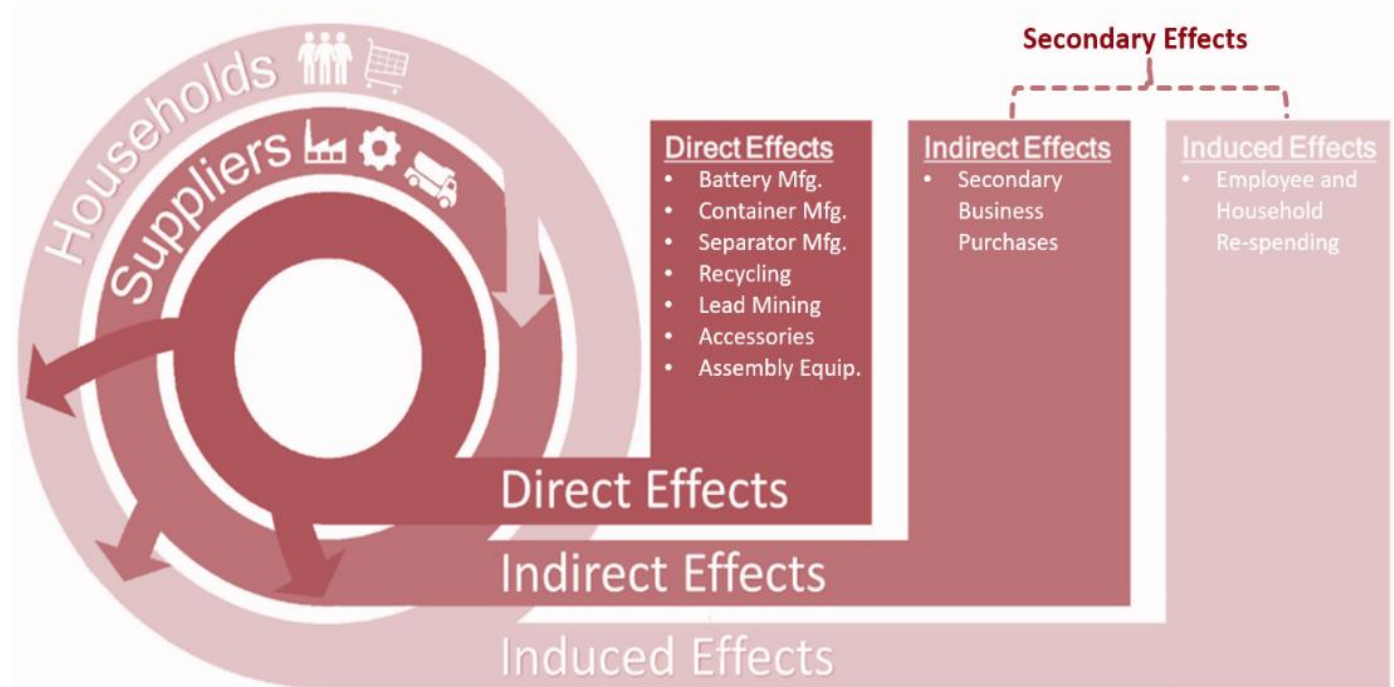
- **Survey**
- **Impacts**
- **Global Trade Implications**
- **Key Markets**
- **Broader Usage in Economy**



- Surveyed participants in lead-acid battery manufacturing,
 - Association of European Automotive and Industrial Battery Manufacturers (EUROBAT) (70%+)
 - International Lead Association (ILA) (~66%)
- Imputed non-responses based on smelter capacity
- Asked for employment, wages, output
- Tracked by country of activity



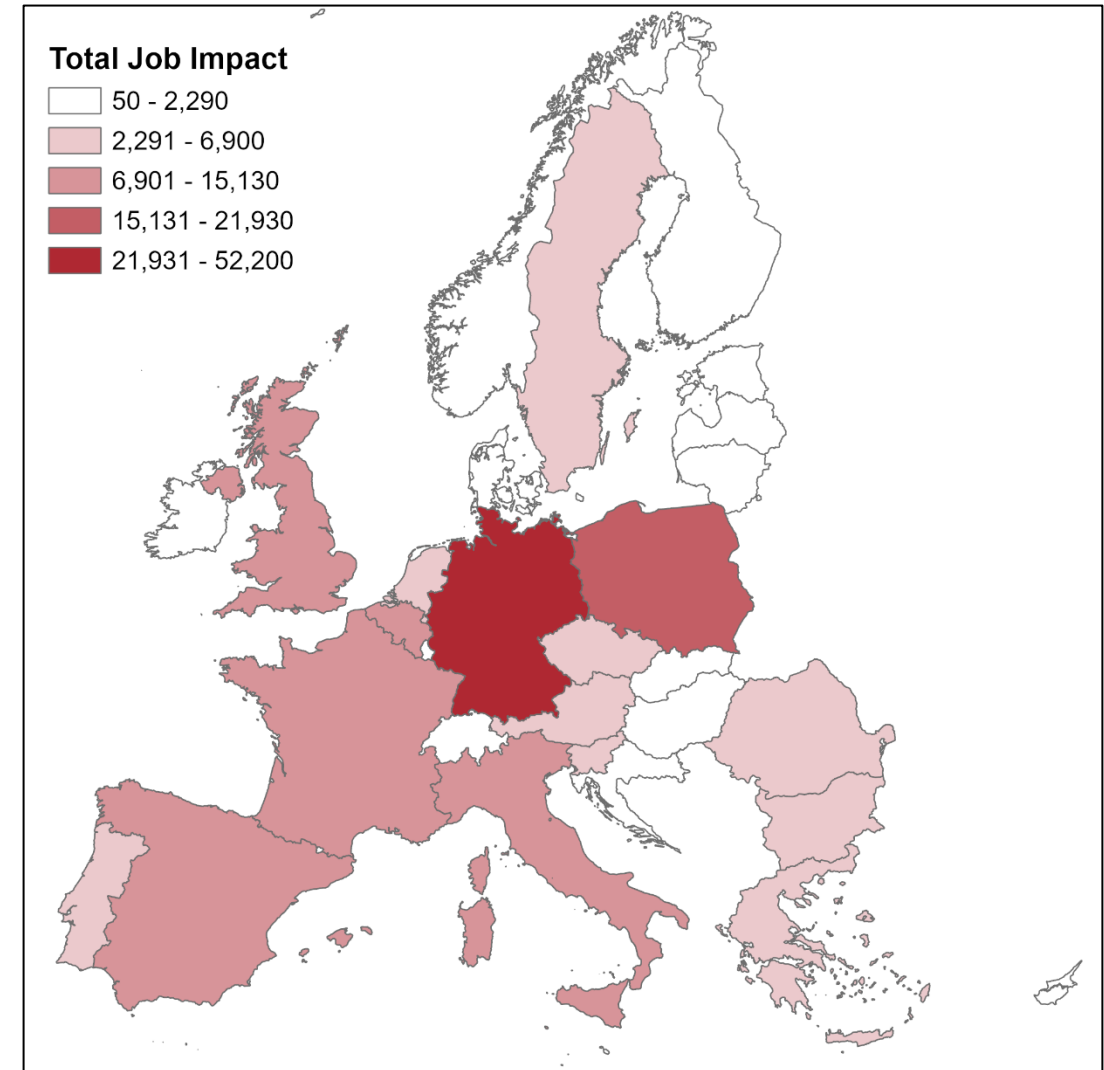
- **Direct effects** result from expenditures associated with battery production, assembly, and recycling. Specifically, they arise from initial purchasing of goods, labor, and materials associated with the battery supply chain
- **Indirect effects** represent the purchase of goods and services by suppliers to meet the demands of direct activity
- **Induced effects** represent the income earned by workers being re-spent in the economy on household goods and services. Figure 1-2 illustrates the relationship among these different effects.



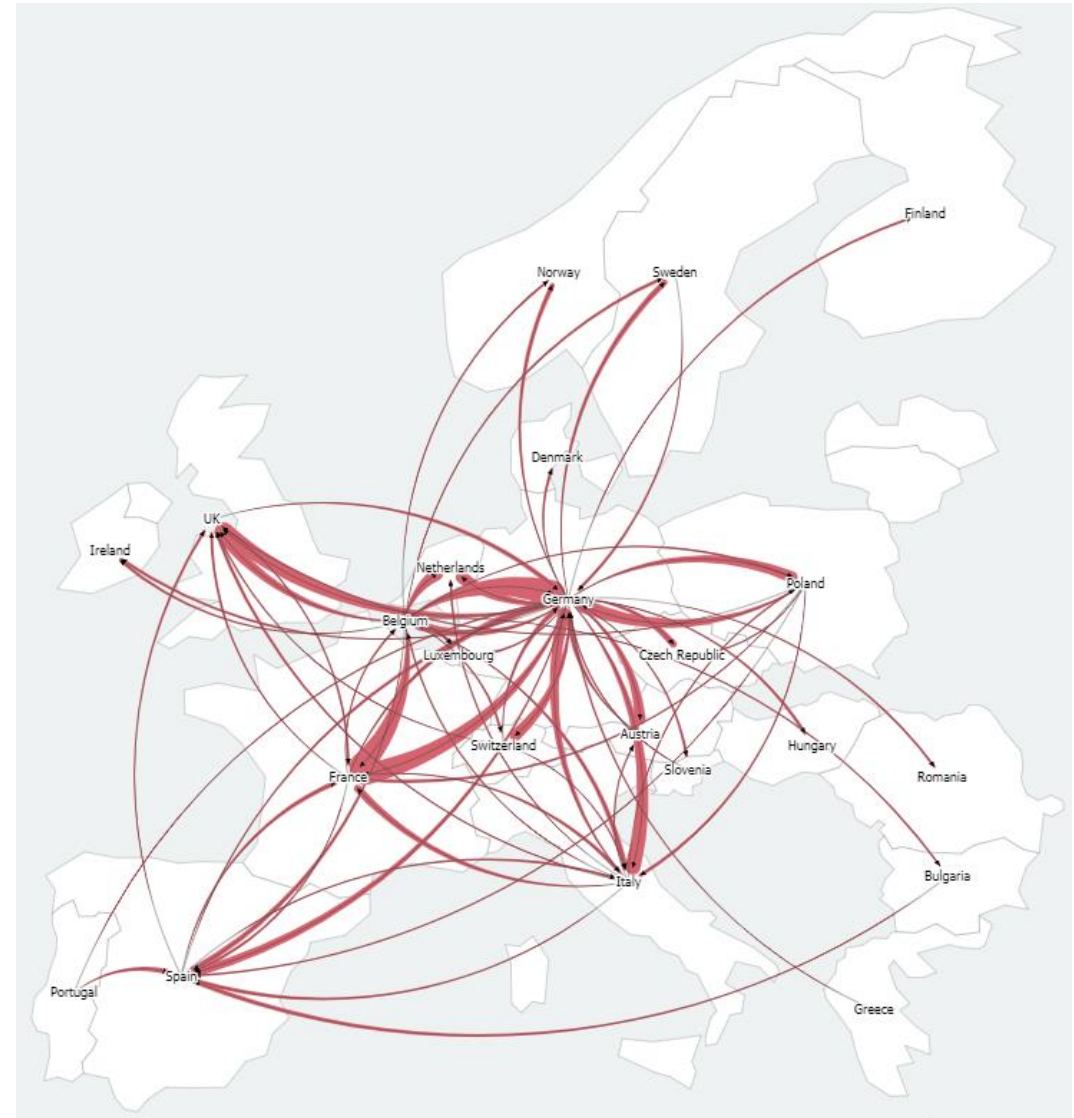
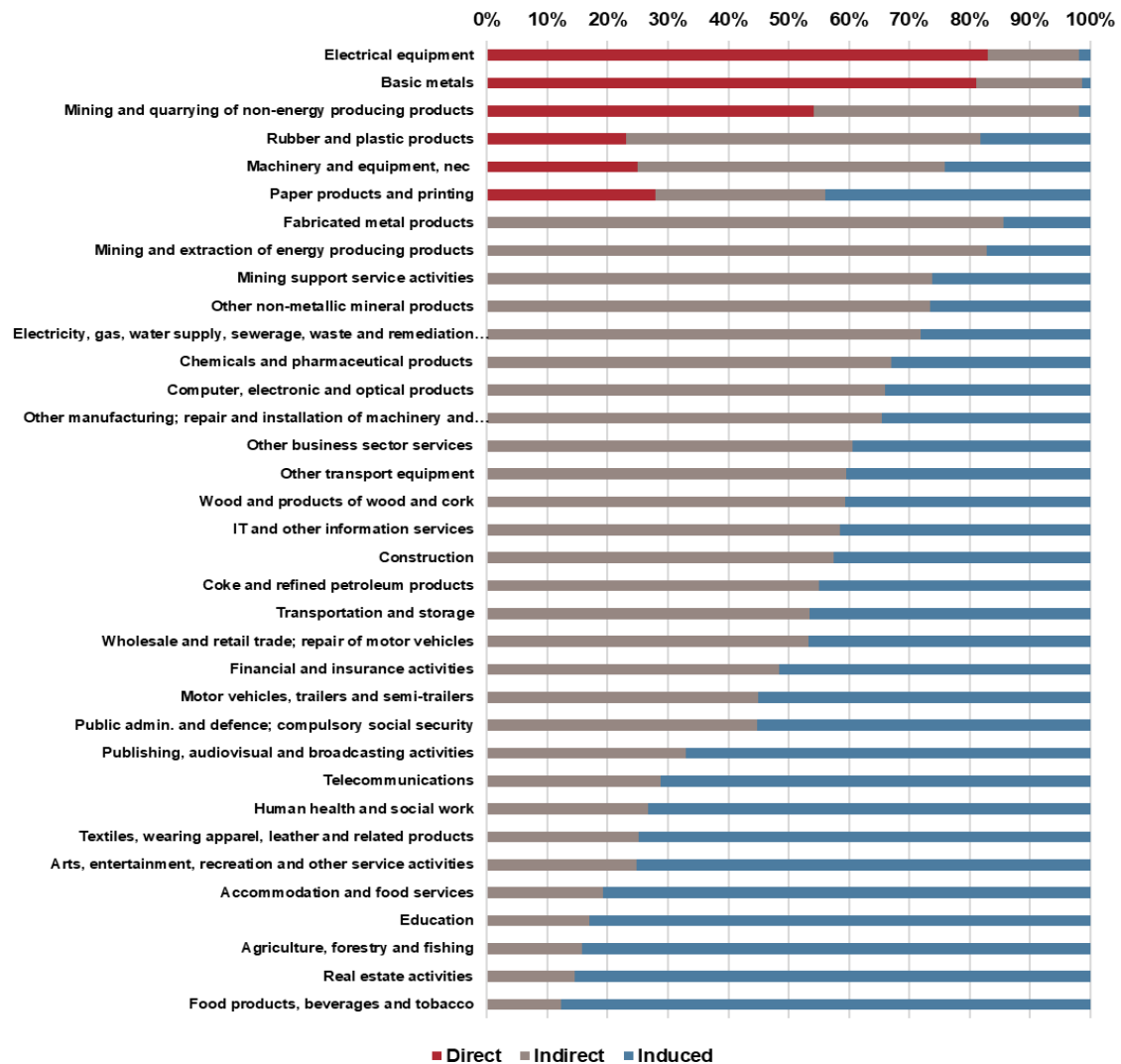
Impact Type	Employment	Income (Million EUR)	Value Added (Million EUR)	Output (Million EUR)
Direct Effects	31,688	2,012	3,402	11,930
Supplier Effects (Indirect)	75,200	2,880	5,450	12,934
Worker Spending Effects (Induced)	77,534	2,677	5,799	11,630
Total	184,423	7,569	14,650	36,494

Impacts by Country

Country	Employment	Income (Million EUR)	Value Added (Million EUR)	Output (Million EUR)
Germany	52,197	2,698.5	4,890.1	11,142.6
Italy	15,126	559.1	1,237.3	3,426.7
France	11,980	682.1	1,213.8	2,786.3
Belgium	10,009	602.2	1,205.2	4,076.5
United Kingdom	10,678	585.4	1,047.5	2,331.8
Spain	11,286	433.9	831.2	2,204.7
Poland	21,930	336.3	761.1	2,110.9
Sweden	3,546	211.5	445.4	1,004.0
Switzerland	2,289	199.4	402.8	975.3
Austria	3,596	187.6	379.4	871.1
Portugal	6,320	179.1	357.3	807.5
Netherlands	3,391	164.8	329.5	739.7
Greece	5,579	155.2	329.3	755.4
Romania	6,920	69.3	174.4	466.3
Norway	772	65.3	146.7	268.8
Czech Republic	3,595	64.1	137.4	371.6
Denmark	892	58.8	100.8	212.2
Bulgaria	5,001	38.9	97.6	389.0
Finland	934	49.2	96.8	231.5
Ireland	534	34.4	94.3	204.9
Slovenia	1,849	56.4	91.7	260.5
Luxembourg	651	46.0	85.7	305.3
Slovak Republic	1,646	27.9	69.0	207.7
Hungary	2,174	33.9	66.4	187.5
Estonia	572	13.7	26.3	76.0
Lithuania	317	4.6	11.2	23.7
Croatia	352	6.2	11.0	24.8
Latvia	181	2.5	5.4	13.2
Cyprus	60	1.7	3.3	7.5
Malta	47	1.2	2.6	10.9
Total	184,423	7,569.0	14,650.3	36,493.8

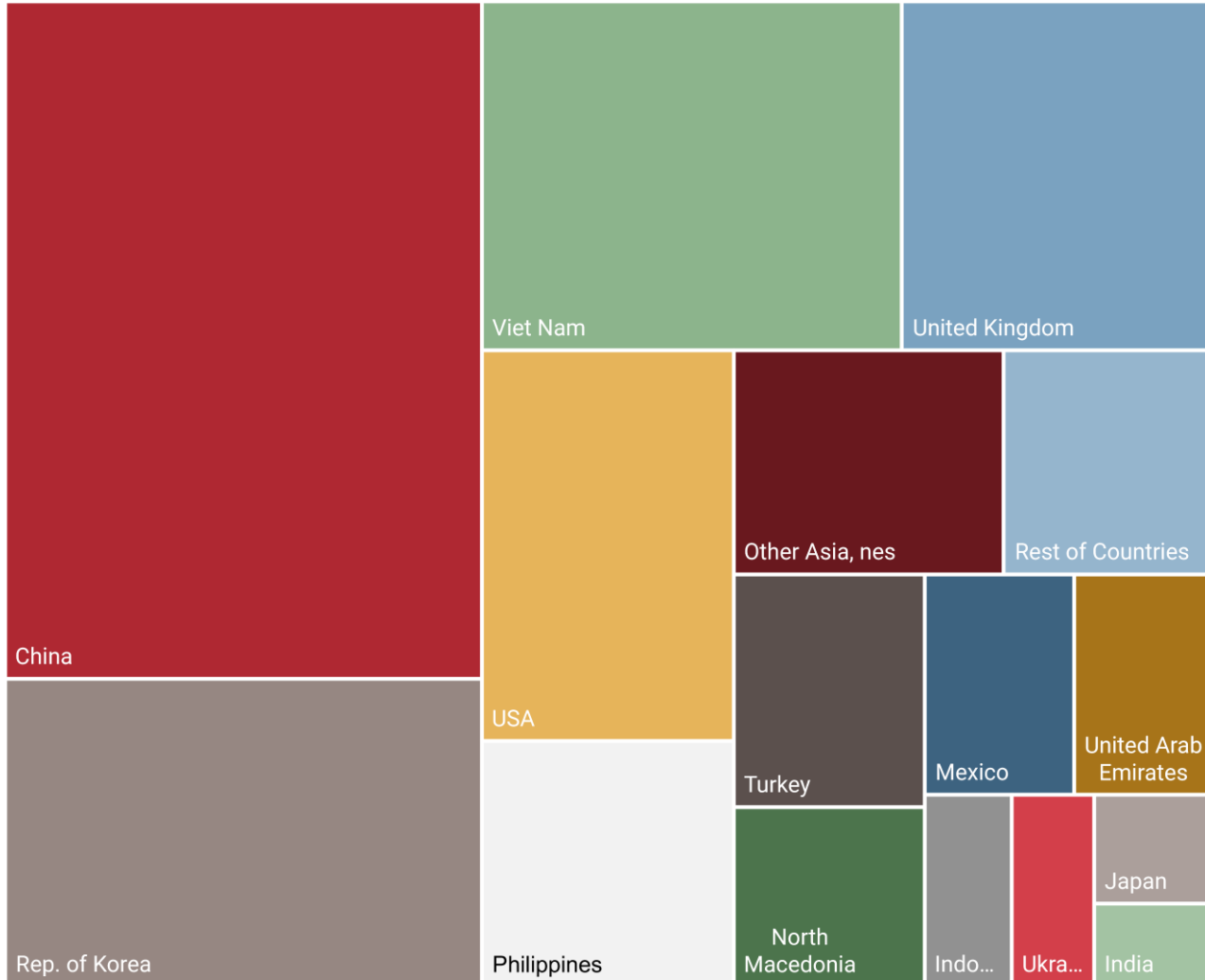


Percentage of Job Impacts by Type of Effect:
Detailed Industry



Sources of EU-27 Lead Acid Battery Imports

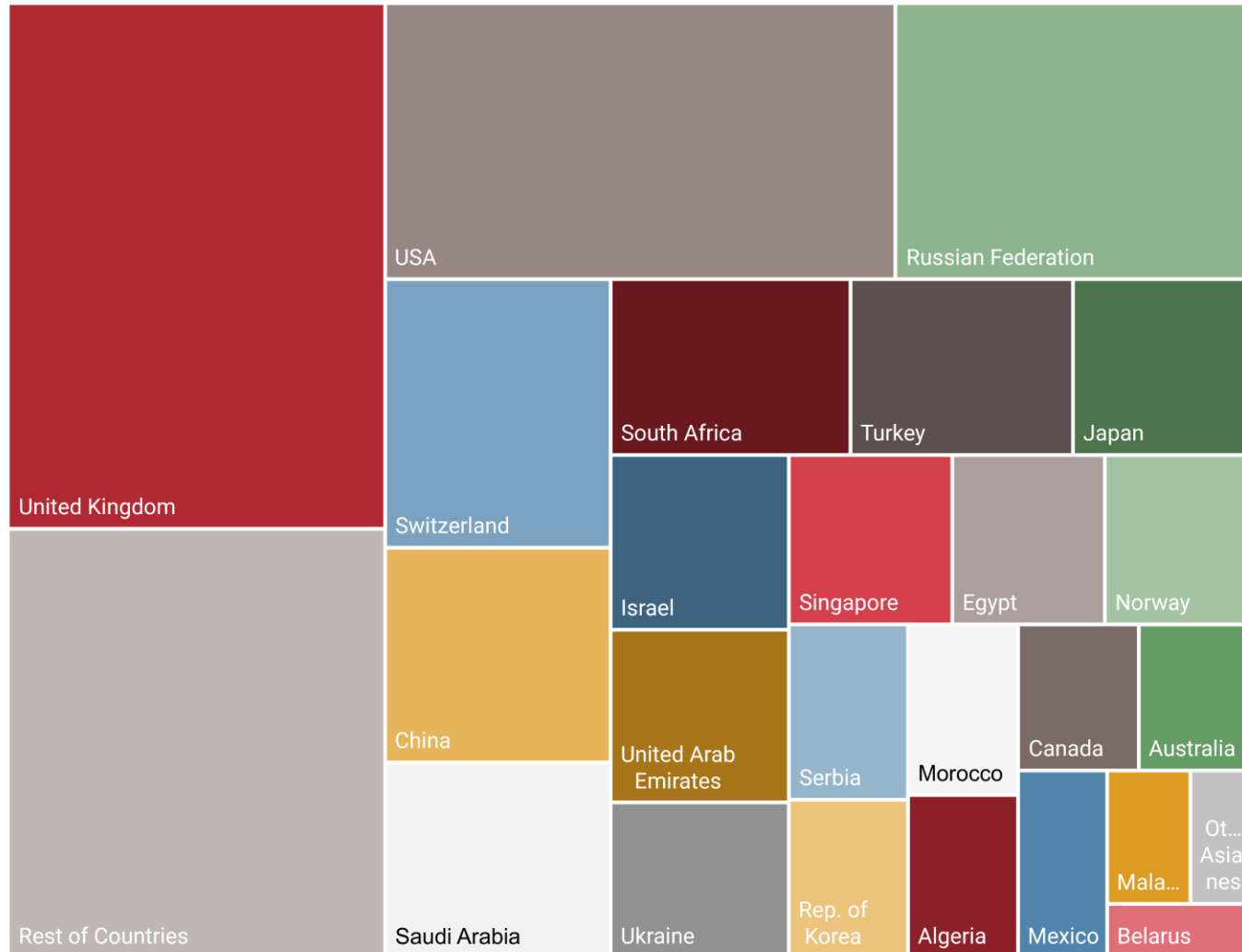
**Top 25 Producers of EU-27 Lead Acid Battery Imports
(2020 MEUR)**



Producers of EU-27 Imports of Lead Acid Accumulators (2020 MEUR)

Country	For Starting Piston Engines	For Non-Piston Engines	Total
China	85.6	293.8	379.4
Rep. of Korea	155.5	17.0	172.5
Viet Nam	23.1	148.7	171.9
United Kingdom	45.7	85.0	130.6
United States	33.0	82.5	115.4
Philippines	0.0	72.5	72.5
Other Asia, nes	20.8	50.2	71.0
Turkey	44.8	7.4	52.2
North Macedonia	30.1	10.1	40.3
Mexico	33.5	5.2	38.7
United Arab Emirates	0.0	37.8	37.8
Indonesia	17.3	2.3	19.6
Ukraine	18.4	0.1	18.6
Japan	14.3	1.8	16.2
India	0.2	12.1	12.3
Rest of Countries	22.4	34.6	57.0
Total	544.8	861.3	1,406.1

Top 25 Consumers of EU-27 Lead Acid Battery Exports
(2020, MEUR)



Consumers of EU-27 Exports of Lead Acid Accumulators (2020 MEUR)			
Country	For Starting Piston Engines	For Non-Piston Engines	Total
United Kingdom	213.4	112.3	325.7
United States	124.2	107.1	231.2
Russian Federation	78.4	84.8	163.2
Switzerland	51.0	48.5	99.5
China	50.8	28.8	79.6
Saudi Arabia	47.8	24.7	72.5
South Africa	61.0	8.3	69.3
Turkey	37.8	26.4	64.2
Japan	44.3	8.3	52.7
Israel	26.9	24.3	51.2
United Arab Emirates	24.9	25.7	50.6
Ukraine	30.6	14.9	45.5
Singapore	23.2	22.2	45.5
Egypt	18.7	23.7	42.5
Norway	22.9	19.0	41.9
Serbia	27.7	6.6	34.3
Rep. of Korea	18.9	12.1	31.0
Morocco	22.2	8.7	30.9
Algeria	23.3	6.2	29.6
Canada	7.7	21.2	28.9
Australia	5.0	23.0	28.0
Mexico	21.0	6.3	27.4
Malaysia	7.0	11.3	18.2
Other Asia, nes	9.0	5.2	14.3
Belarus	8.9	4.3	13.2
Rest of Countries	114.2	152.0	266.1
Total	1,120.7	836.1	1,956.8

Source: UN COMTRADE: HS (85071-2): Electric Accumulators; Lead-Acid, piston engines and other

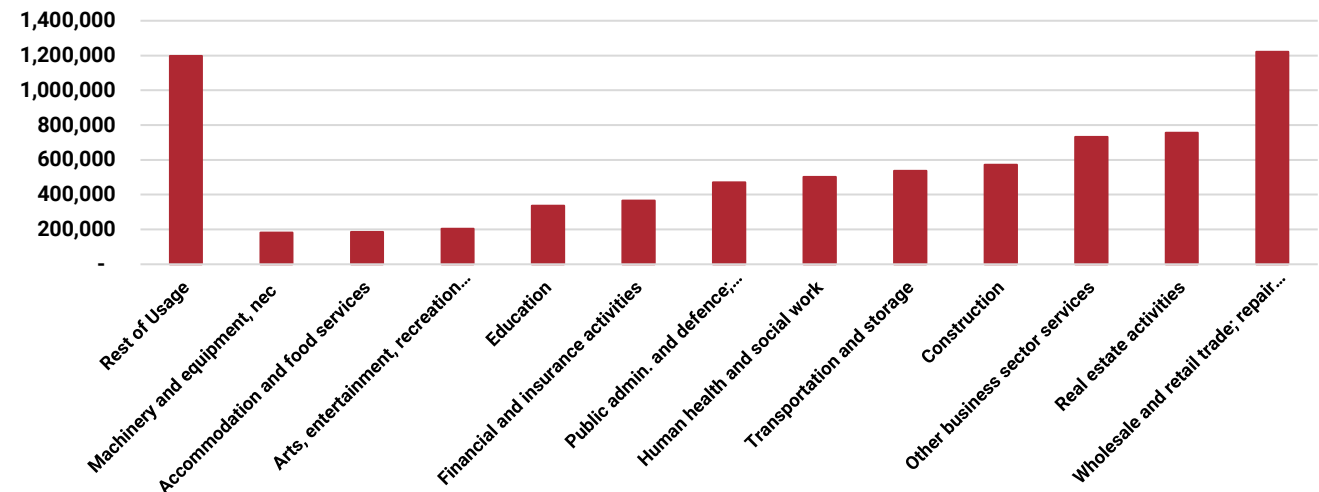
- **6 Billion in battery sales in European Market**
- **Used as inputs to industry production responsible for generating 7.3 Trillion in GDP**
- **Supporting Activity generating over 40% of economy**
- **Driven by consumer market, and industrial application**

* Source: Avicenne

Aggregated Type	End User	2019 Sales (MEUR)	% of Demand
SLI	SLI	4,005	67.1%
Motive	E-Bikes, Golf Carts	45	0.8%
Motive	Motive	1,039	17.4%
Stationary	Stationary	724	12.1%
Other	Others	153	2.6%
Total		5,966	100%

	Employment	Income (MEUR)	Value Added (MEUR)	Output (MEUR)
Battery Affected Industry	103,911,900	3,935,676	7,263,342	14,614,192
Overall Economy	233,473,908	9,227,221	17,371,341	35,465,450
Percent of Economy Impacted	45%	43%	42%	41%

Industry Economic Usage (MEUR)



- Lead battery industry Supports over 184,000 Jobs, earning 7.6 billion EUR, and generating 14.7 billion EUR in GDP
- Important source of generating social security payments (1.9 billion EUR)
- Lead battery companies innovate through ongoing **research and development**. Industry-wide, companies report spending nearly 40 million EUR on R&D annually.
- The industry uses **high levels of recycled content**. According to survey respondents, over 60 percent of the inputs to production come from recycled content. Other sources report that the recycled content in a new lead battery ranges from 67-80%.
- The downstream industry activity enabled through usage of lead batteries is extensive: **€7.3 trillion worth of GDP** covering retail, construction, and healthcare applications.



Thank You!

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