

To estimate the **Potential Peak Sales** for atezolizumab (Tecentriq) in the first-line treatment of metastatic non-small cell lung cancer (NSCLC) with high PD-L1 expression in the US, EU5 (France, Germany, Italy, Spain, UK), China, and Japan, as well as the **\$ value of 1% share of treated patients** in these geographies, we need to follow a structured approach based on available data and reasonable assumptions. Since exact figures for patient populations, pricing, and market penetration may vary, the following analysis is based on estimates and general industry trends.

Key Assumptions and Methodology

1. Indication and Patient Population:

- Atezolizumab is approved for first-line metastatic NSCLC with high PD-L1 expression (TC \geq 50% or IC \geq 10%).
- Approximately 25-30% of NSCLC patients have high PD-L1 expression (based on published studies and clinical trial data like IMpower110).
- We will estimate the total NSCLC incidence and calculate the eligible patient population for this indication.

2. Market Share:

- As per the query, we assume a 20-30% share of treated patients for atezolizumab in this indication. This accounts for competition from other PD-1/PD-L1 inhibitors like pembrolizumab (Keytruda), which dominates the first-line NSCLC market.

3. Pricing:

- Atezolizumab's annual cost per patient varies by region due to differences in healthcare systems and pricing negotiations. Based on available data:
- US: ~\$150,000–\$180,000 per patient per year.
- EU5: ~\$100,000–\$120,000 per patient per year (lower due to price controls and reimbursement negotiations).
- Japan: ~\$100,000–\$130,000 per patient per year.
- China: ~\$50,000–\$70,000 per patient per year (lower due to market access programs and local pricing).

4. Peak Sales Timeline:

- Peak sales are typically achieved 5-7 years after launch in a specific indication, assuming no major competition or patent expiry disruptions. Atezolizumab was approved for this indication in 2020 (US), so peak sales could be projected around 2025-2027.

5. Epidemiology Data:

- NSCLC accounts for ~85% of all lung cancer cases.
- Incidence of lung cancer (used as a proxy for NSCLC patient pool) in the target geographies (based on WHO/IARC GLOBOCAN 2020 data and other sources):
- US: ~230,000 new lung cancer cases/year \rightarrow ~195,500 NSCLC cases.
- EU5: ~320,000 new lung cancer cases/year \rightarrow ~272,000 NSCLC cases.

- China: ~820,000 new lung cancer cases/year → ~697,000 NSCLC cases.
- Japan: ~130,000 new lung cancer cases/year → ~110,500 NSCLC cases.
- Metastatic NSCLC (Stage IV) accounts for ~40-50% of NSCLC cases at diagnosis.
- High PD-L1 expression: ~25-30% of metastatic NSCLC patients.

6. Penetration Rate:

- Not all eligible patients receive treatment due to access, cost, or clinical factors. We assume a treatment rate of 60-80% in the US/EU5/Japan and 30-50% in China.

Step 1: Estimate Eligible Patient Population

Using the above data, let's calculate the number of metastatic NSCLC patients with high PD-L1 expression who are eligible for first-line atezolizumab.

Region	NSCLC Cases (Annual)	Metastatic NSCLC (45%)	High PD-L1 (27.5%)	Treated Patients (Est. Rate)
US	195,500	87,975	24,193	16,935 (70%)
EU5	272,000	122,400	33,660	23,562 (70%)
China	697,000	313,650	86,254	34,502 (40%)
Japan	110,500	49,725	13,674	9,572 (70%)
Total	1,275,000	573,750	157,781	84,571

Step 2: Estimate Potential Peak Sales (20-30% Market Share)

Assuming atezolizumab captures 20-30% of treated patients, we calculate the number of patients treated with atezolizumab and multiply by the average annual cost per patient.

Region	Treated Patients	Atezolizumab Patients (20-30%)	Annual Cost/Patient	Peak Sales (20% Share)	Peak Sales (30% Share)
US	16,935	3,387–5,081	\$165,000	\$559M	\$838M
EU5	23,562	4,712–7,069	\$110,000	\$518M	\$778M
China	34,502	6,900–10,351	\$60,000	\$414M	\$621M
Japan	9,572	1,914–2,872	\$115,000	\$220M	\$330M
Total	84,571	16,913–25,373	-	\$1,711M	\$2,567M

Thus, the **Potential Peak Sales** for atezolizumab in this indication across the US, EU5, China, and Japan are estimated to be **\$1.7 billion to \$2.6 billion** annually, assuming a 20-30% market share.

Step 3: Calculate \$ Value of 1% Share of Treated Patients

A 1% share of treated patients corresponds to 1% of the total treated patient pool (84,571 patients) across these geographies, which is approximately 846 patients. Using the weighted average cost per patient across regions (based on patient distribution and pricing), we calculate the value.

- Weighted average cost per patient:
- US: $(16,935/84,571) * \$165,000 = \sim \$33,000$ contribution
- EU5: $(23,562/84,571) * \$110,000 = \sim \$30,600$ contribution
- China: $(34,502/84,571) * \$60,000 = \sim \$24,500$ contribution
- Japan: $(9,572/84,571) * \$115,000 = \sim \$13,000$ contribution
- Total weighted average cost per patient = $\sim \$101,100$
- **1% share of treated patients** = 846 patients * \$101,100 = **\$85.5 million**

Final Answer

1. **Potential Peak Sales for Atezolizumab** in first-line metastatic NSCLC with high PD-L1 expression (20-30% market share):

- US, EU5, China, and Japan combined: **\$1.7 billion to \$2.6 billion annually.**

2. **\$ Value of 1% Share of Treated Patients** in these geographies: **\$85.5 million.**

Notes

- These figures are estimates and sensitive to changes in pricing, market competition (e.g., Keytruda, Opdivo), patient access, and treatment duration.
- Peak sales could be impacted by biosimilars or patent expiry (atezolizumab's patent is expected to expire around 2035 in major markets).
- China's market potential is significant due to high patient numbers, but lower pricing and access barriers temper revenue projections.