

Additive Technologies & Metal Powders for 3D Printing Production Project

Technology Transfer or Joint Project of Metal powders for 3D printing production in Kazakhstan.

Technology & Two Projects for consideration

Modern additive technologies involve the use of about twenty tested and ready-to-use materials, including tool, stainless, heat-resistant alloys, aluminum and titanium alloys, medical cobalt-chromium and titanium.

Project #1 – R&D Additive Technology for Tantalum and Niobium Metal Powders for 3D Printing (Almaty Industrial Special Economic Zone)

Project #2 - Metal Powders for 3D Printing Production Project (Ust-Kamenogorsk city. Joint Project with National Company Kazatomprom)

Project Goals & Capacity

Location: Almaty, Ust-Kamenogorsk (Kazakhstan)

Partnering Companies:

- 1) Industrial Special Economic Zone Operator.
- 2) National Company “Kazatomprom”

Target: Additive technologies transfer and metal powders production project.

Time Pipeline: 1-3 years

Key Strengths & Drivers

1	Advantages of metal 3D printing	<ul style="list-style-type: none">• High density values: 1.5 times higher than in casting;• the ability to create miniature and geometrically complex objects and other unique forms in the form of closed bionic structures;• a wide range of metal alloys, both standard and special;• reduction of production cycles and acceleration of the output of finished products.
3	Solid and reputable partners in KZ	National Company “Kazatomprom” and Industrial Special Economic Zone Operator are both state-owned companies with an impeccable reputation. Kazatomprom is a world leader in the production of uranium, has a diversified business and, in addition to uranium, also produces rare earth metals. Tech Garden is the management company of the Special Industrial Economic Zone.
2	Low cost of production in KZ	Project might be realized in Special Economic Zone «Park of Innovative Technologies» electricity will cost approximately \$0.044 kWh, for example in the US the cost is \$0.14 kWh. Other utility costs are quite favorable. Labor costs are also very low in comparison with US, Canada, Australia and EU markets, about 300 USD per month for a mid-level employee; unskilled labor is paid even lower. Tax and Customs Exemption – up to 0%.

Project Location



Metal powder types suggested for the production

- **Tantalum and Niobium**
- Titanium and its alloys (Ti, Ti6Al4V, Ti6Al7Nb, Ti6Al4V),
- Aluminum and its alloys (Al, AlSi12),
- Copper (Cu) and Bronze alloys (CuBe2)
- Tungsten
- Stainless alloys (17-4PH, AISI 410, AISI 304L, AISI 316L, AISI 904L),
- Tool alloys (1.2343, 1.2367, 1.2709).



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