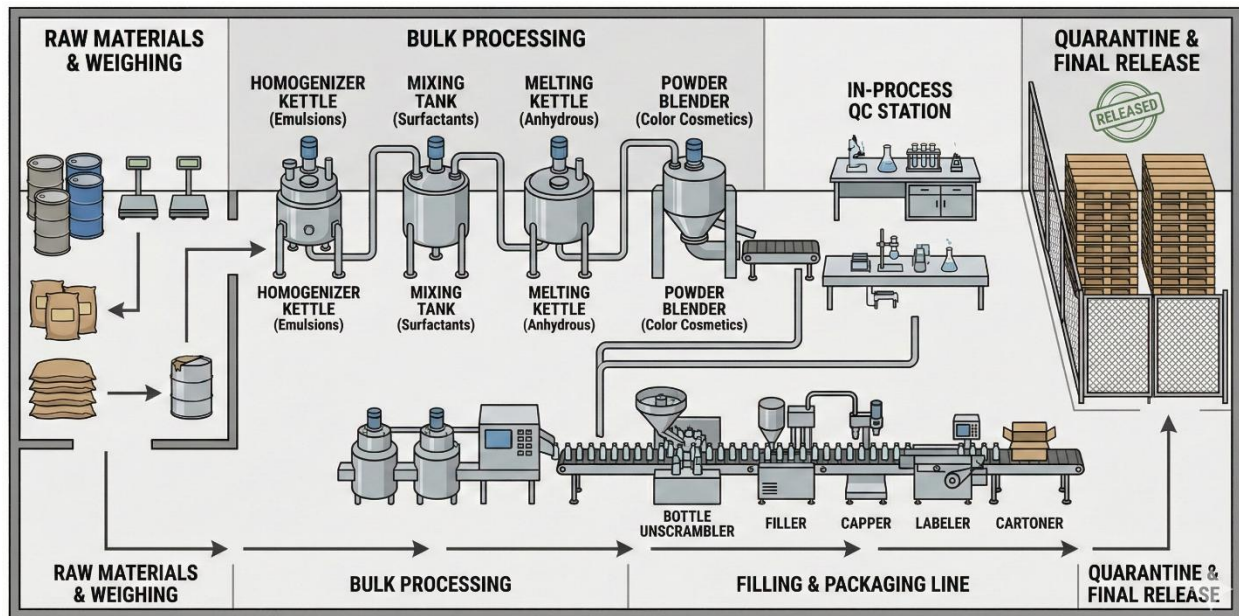


One Central Core, Multiple Product Streams – Cosmetics Production Line



Executive Summary

The **Central Core Cosmetics Production Line** is an innovative turnkey solution designed to maximize efficiency and flexibility across multiple product streams. Instead of separate, dedicated lines for each formulation, a **central mixing and homogenizing core** prepares high-quality emulsions and dispersions, which are then distributed to various filling and packaging modules tailored to different product types. This modular design lowers capital expenditure, reduces floor space and cleaning downtime, and allows rapid changeovers between products. Key features include:

- **Production Capacity:** 200–1 000 kg per batch with throughput of 500–2 000 units/hour depending on packaging size.
- **Investment Range:** US \$70 000 – \$150 000 covering equipment, installation, training and working capital.
- **Payback Period:** 12 – 24 months under single-shift operation.

- **Market Opportunity:** Growing demand for locally manufactured personal care products; ability to produce creams, lotions, serums and oils for domestic and regional markets.

The proposal details product categories, processing steps, equipment specifications and investment requirements. Each step is illustrated with a realistic machine image and a process diagram to ensure clarity.

About Sanaatchi Industrial Vision

Sanaatchi Industrial Vision is Afghanistan's premier partner for turnkey manufacturing projects. Clients bring their vision and capital—we deliver everything else. Our services span four integrated phases: **Engineering & Design** (feasibility studies and process design), **Global Sourcing & Logistics** (supplier selection, procurement and transportation), **Implementation & Construction** (installation, utilities and building infrastructure) and **Commissioning & Support** (training, pre-commissioning and after-sales service). With transparent pricing, on-time delivery and a commitment to client trust, Sanaatchi ensures every production line meets technical specifications, regulatory requirements and market needs.

Market Opportunity for Cosmetics in Afghanistan

Afghanistan imports the majority of its personal care and beauty products, presenting a significant opportunity for local manufacturing. Drivers include:

- **Rising incomes and urbanization:** Younger consumers and urban households are adopting international beauty routines, increasing demand for moisturizers, lotions and serums.
- **Import substitution:** High import tariffs and currency volatility make local production cost-competitive with imported brands.
- **Regional exports:** Neighboring Central Asian markets offer growing demand for Halal-certified beauty products.
- **Customization:** Local producers can tailor formulas for climate (e.g., dry skin), cultural preferences (herbal extracts) and price sensitivity.

By establishing a central-core production facility, investors can produce multiple product types under one roof, reduce supply chain risk and capture a share of the region's cosmetics market.

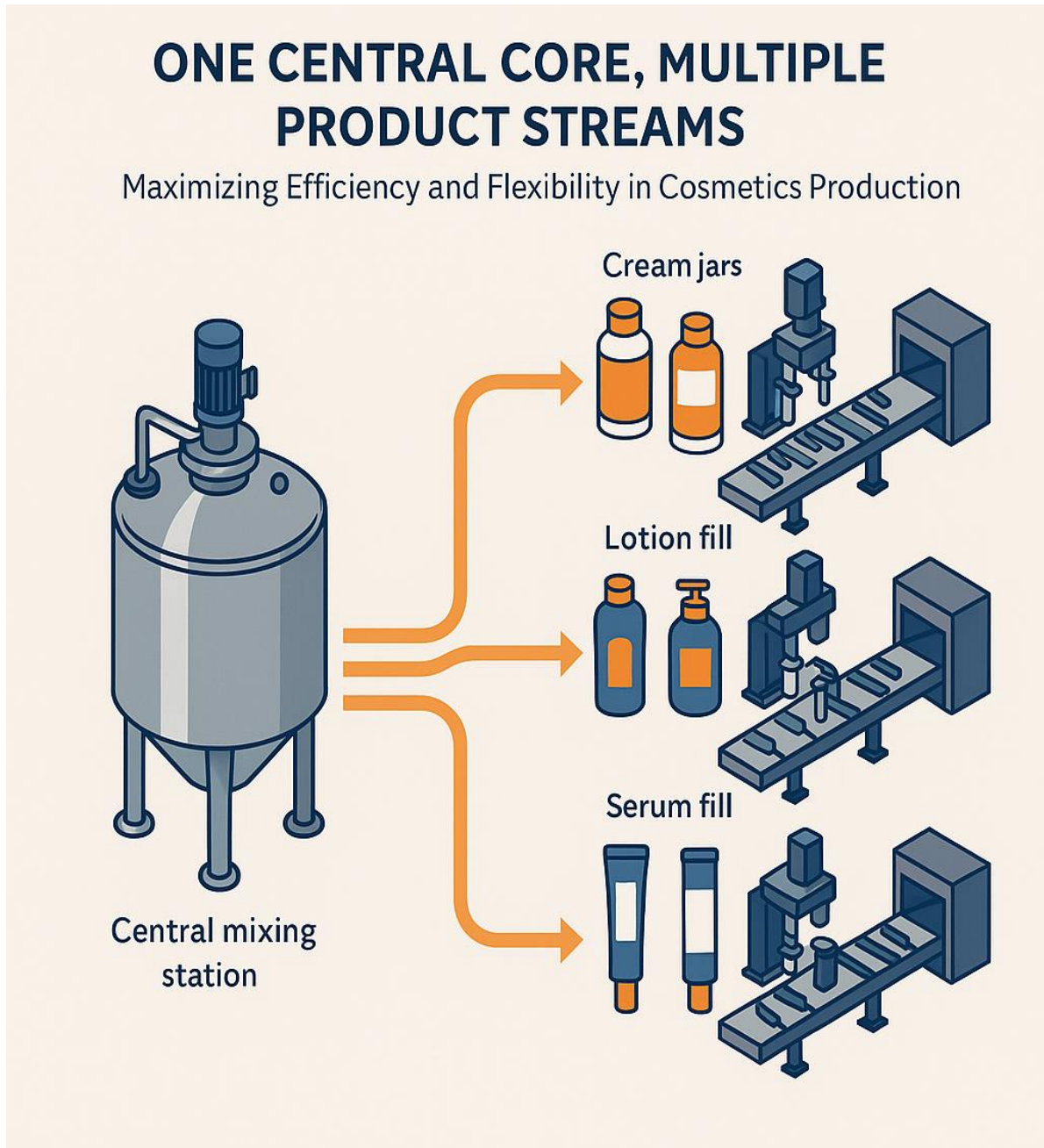
Product Portfolio – Phase 1 Launch

Product Category	Examples	Target Market	Competitive Advantage
Face & Body Creams / Lotions	Hydrating creams, body lotions, anti-aging creams, sunscreens	Mass market & premium segments	Customized formulations (light vs. rich textures), ability to incorporate vitamins and botanical extracts
Hair Care Treatments	Leave-in conditioners, hair masks, hair serums	Women & men seeking salon-quality haircare	High-shear mixing ensures uniform dispersion of oils and actives, producing smooth, stable products
Skin Treatments / Serums	Vitamin C serums, hyaluronic acid gels, spot-treatments	Premium skincare customers	Vacuum emulsifier eliminates air bubbles and ensures fine particle size for high potency.
Body & Massage Oils	Herbal massage oils, aromatherapy blends	Spa & wellness providers	Modular filling lines accommodate glass or PET bottles; central core minimizes cleaning time when switching oils
Perfume & Personal Scents	Body mists, roll-on fragrances	Youth and middle-income segments	Access to precision dosing and mixing ensures consistent fragrance profiles

Additional product lines (shampoo, shower gel, liquid soap) can be added by connecting extra filling modules to the central core without major modifications.

Manufacturing Process Flow

A shared **central mixing station** prepares emulsions and base formulations. From this core, three product streams branch off to dedicated filling and packaging lines. The flowchart below illustrates the concept.



Central core mixing with multiple product streams

Central core mixing concept: one homogenizing vessel supplies cream jar, lotion bottle and serum tube filling lines.

Process Flow Table

Step	Process Name	Key Equipment	Main Parameters
1	Raw Material Preparation	Weighing stations, storage tanks	Oils, waxes, water and actives are weighed and pre-heated separately; water phase heated to 70–80 °C; oil phase to 75–85 °C.
2	Emulsification & Homogenization	Vacuum emulsifier homogenizer (central core)	High-shear agitation (up to 3 500 rpm) and vacuum mixing remove air bubbles; capacity 100 – 5 000 L; particle size 0.2–5 µm; PLC controls temperature and speed 【357021066753100†L199-L233】 .
3	Deaeration & Cooling	Vacuum cooling vessel with circulation pump	Cooling jacket brings batch to 30–40 °C; vacuum maintains bubble-free texture; ensures stable viscosity before filling.
4	Transfer & Filtration	Transfer pumps, inline filters	Homogenized product pumped through 100 µm filter to remove particulates; CIP-ready piping for quick changeover.
5	Jar Filling & Capping	Rotary or inline jar filler, automatic capping machine	Adjustable nozzles fill 50–200 g jars at 30–80 jars/min; torque-controlled capper ensures tight, leak-free closure.
6	Bottle Filling & Pump Capping	Piston filler or peristaltic pump filler, pump capper	Fills 50–500 mL bottles at 30–100 bottles/min; pump or spray caps fitted and tightened; compatible with viscous lotions and oils.
7	Tube Filling & Sealing	Rotary tube filling & sealing machine	Fills PE or laminated tubes 5–250 mL at 30–60 tubes/min; seals via ultrasonic or hot-air; date coding.
8	Labelling & Secondary Packaging	Labeling machines, cartoners, shrink wrappers	Applies wrap-around or front/back labels; cartons and shrink-wrap protect products; output 20–60 packs/min.
9	Quality Control & CIP	Sampling lab, metal detector, CIP system	Check weight, viscosity, pH and microbiological contamination; metal detector ensures no ferrous/ non-ferrous contamination; CIP system cleans mixing core and lines between products.

Detailed Process Descriptions

Step 1 – Raw Material Preparation

Manufacturing begins by accurately weighing oils (e.g., sunflower, almond or mineral oil), waxes (beeswax, paraffin), water and active ingredients. Oil and water phases are heated separately to the required temperatures and transferred to pre-mix tanks. Precise weighing and temperature control ensure consistent batch quality.

Step 2 – Emulsification & Homogenization

Pre-heated phases are pumped into the **vacuum emulsifier homogenizer**, which performs mixing, emulsifying and dispersing under vacuum. According to LIENM's description, vacuum emulsifiers are engineered to produce smooth, stable emulsions even for heat-sensitive ingredients. High-shear mixing and vacuum remove entrapped air, yielding a fine particle size (0.2–5 μm). LIENM notes that vacuum mixers combine mixing, heating and vacuum functions to remove air bubbles and prevent oxidation, making them ideal for sensitive formulations.



Vacuum emulsifier homogenizer

Vacuum emulsifier/homogenizer with control panel and pre-mix pots.

Step 3 – Deaeration & Cooling

After emulsification, the product enters a vacuum cooling vessel where it is gently cooled while maintaining vacuum to prevent bubble formation. Cooling ensures the product reaches filling temperature and improves viscosity control for accurate dosing.

Step 4 – Transfer & Filtration

A sanitary transfer pump moves the cooled emulsion through an inline filter (mesh ~100 µm) to remove any particulates. The pipework is designed for Clean-in-Place (CIP), enabling rapid cleaning between product types without disassembly.

Step 5 – Jar Filling & Capping

For thick creams packaged in jars, a rotary or inline filling machine doses the product into glass or PP jars. Adjustable nozzles and servo-controlled pistons ensure accuracy within $\pm 1\%$. An automatic capping machine applies screw or snap-on lids with controlled torque.

Step 6 – Bottle Filling & Pump Capping

Lotions and oils are filled into bottles using piston or peristaltic pump fillers that handle viscosities from 10 cPs to 50 000 cPs. Machines can fill 30–100 bottles per minute, with fill volumes from 50 mL to 500 mL. Pump or spray caps are automatically placed and tightened.



Bottle filling and capping machine

Multi-head bottle filling and capping machine for lotions and oils.

Step 7 – Tube Filling & Sealing

Serums and gels are packaged in flexible tubes using a rotary tube filling and sealing machine. Tubes are automatically loaded, oriented, filled to volumes between 5 mL and 250 mL and sealed using hot-air or ultrasonic sealing. The machine prints batch codes and expiry dates on the crimp.



Tube filling and sealing machine

Automatic tube filling and sealing machine for creams and gels.

Step 8 – Labelling & Secondary Packaging

After primary packaging, products move through labeling machines that apply front/back or wrap-around labels. Coded cartons or shrink-wrap protect the product for transport. Lines can produce 20–60 packs per minute, depending on pack size.

Step 9 – Quality Control & CIP

Quality control is integrated throughout production. Samples from each batch are tested for pH, viscosity, and microbial contamination. Metal detectors check for ferrous and non-ferrous contaminants. A Clean-in-Place system flushes the mixing core and pipelines after each batch, minimizing downtime and cross-contamination. Regular cleaning and sterilization are essential to prevent cross-contamination.

Raw Materials Requirements

Typical cosmetic formulations use readily available ingredients:

- **Oils & Waxes:** Sunflower oil, almond oil, mineral oil, shea butter, beeswax.
- **Water & Humectants:** Deionized water, glycerin, sorbitol, propylene glycol.
- **Emulsifiers & Thickeners:** Stearic acid, glyceryl stearate, cetyl alcohol, carbomer, xanthan gum.
- **Active Ingredients:** Vitamins (C, E), hyaluronic acid, botanical extracts (aloe vera, chamomile), antioxidants.
- **Preservatives & Stabilizers:** Parabens, phenoxyethanol, EDTA, natural preservatives.
- **Fragrances & Colorants:** Essential oils, fragrance oils, approved cosmetic pigments.
- **Packaging Materials:** Glass or PP jars (50–200 g), PET or HDPE pump bottles (50–500 mL), aluminum/plastic laminate tubes (5–250 mL), cartons and shrink film.

Cost Estimate: Raw material costs vary widely by formulation; however, typical manufacturing costs for a 100 mL lotion or cream range from **US \$0.80 – \$1.20** (including packaging). Finished products retail for **US \$4 – \$10** per unit, yielding substantial margins.

Investment Summary & Returns

Component	Low Range (US) HighRange(US)	Notes
Central Mixing & Homogenizing Core	25 000	50 000 Includes vacuum emulsifier/homogenizer with oil & water phase pots, control system and CIP unit.
Filling Lines (jars, bottles, tubes)	20 000	40 000 Three modular filling and capping/sealing modules; each line rated at 30–100 units per minute.
Utilities & Auxiliary Equipment	5 000	10 000 Water treatment, air compressors, chilled water system, transfer pumps, filters.
Installation & Training	3 000	7 000 Engineering travel, on-site installation, commissioning and operator training.
Working Capital	20 000	40 000 Raw materials, packaging stock and initial three months of operating costs.
Total Investment	70 000	150 000 Variation depends on batch capacity and automation level.

Timeline:

1. **Months 1–2:** Engineering design and selection of mixing core and filling modules.
2. **Month 3:** Manufacturing of equipment (vacuum emulsifier, filling lines).
3. **Month 4:** Shipping and customs clearance.
4. **Month 5:** Installation, utilities hookup and commissioning.
5. **Month 6:** Trial production, quality validation and staff training.
6. **Month 7:** Commercial launch.

ROI: With efficient production and a diversified product portfolio, the project is expected to break even within **12 – 24 months**, assuming 70 % utilization in a single shift.

Quality Standards & Compliance

To compete with imported brands, the facility will adhere to international and regional standards:

- **ISO 22716 / Good Manufacturing Practices (GMP) for Cosmetics:** Ensures hygienic production, traceability and documentation.
- **ISO 9001 Quality Management System:** Provides consistent procedures and continuous improvement.
- **Halal Certification:** Essential for regional markets.
- **FDA / EU Cosmetic Regulations:** Compliance with labelling, ingredient safety and shelf-life requirements.
- **Environmental & Safety Standards:** Implementation of wastewater treatment and proper handling of volatile compounds.

Conclusion & Next Steps

By investing in a **central core cosmetics production line**, entrepreneurs can produce a versatile range of personal care products with minimal downtime and cleaning. The shared mixing core and modular filling lines maximize efficiency and allow quick switching between creams, lotions, serums and oils. Sanaatchi Industrial Vision offers end-to-end support—from feasibility study through design, sourcing, installation, commissioning and after-sales service—ensuring a successful market entry.

Contact Information

Sanaatchi Industrial Vision – Afghanistan’s premier turnkey manufacturing partner

- **Afghanistan Office (Kabul):** +93 779 819 820 – info@sanaatchi.com – Saturday – Wednesday 9:00–17:00; Thursday 9:00–13:00
- **China Office:** +86 159 5171 6867 – china@sanaatchi.com – Monday – Friday 9:00–18:00
- **Website:** www.sanaatchi.com

Next Steps

1. Schedule an initial consultation within 24 hours to discuss production goals.
2. Receive a custom proposal tailored to your capacity and product portfolio.
3. Conduct a site assessment and utility planning (electricity, water, HVAC).
4. Proceed with project implementation and ongoing support.