Biozeen approach for vaccine production infrastructure development in Africa

Process Technologies for Health & Well Being

TURNKEY SOLUTIONS FOR PHARMA, VACCINE & BIOLOGICS PRODUCTION

Grateful for the opportunity to support you in making Covid Vaccines

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Key finding for Vaccine infrastructure support to Africa

❑ Africa today produce only 1% of the total vaccine that its use.

❑ Covid-19 pandemic strongly demonstrated the needs to scale up the manufacturing vaccine capacity:

1. Poor sustainability and high dependence
2. Vulnerability to epidemic and pandemic
3. Poor emergency preparedness

Target: Reduce the external supply chain dependence, increase safety, impact in the endemic diseases and contribute to the incoming pandemic preparedness:
- Funding /feasibility studies
- Partnership and collaboration
- Tech transfer
- Vaccine type/other biological product
- Regulatory and ecosystem
- Others….

Africa goal: 60% of Africa’s vaccine demand should be self-sufficiency for 2040: 15 years gap

Source: Scaling up African vaccine manufacturing capacity, Wellcome, Boston consulting group, Biovac, January 2023
Strategy for Ramping-Up vaccine manufacturing

Inherent Variances and Complexities that limit a quicker one size that fits all approach:

- Vaccine types: Live attenuated, Replicating vectors, Non-replicating viral vectors, Inactivated virus, Virus like particles, Subunit, Nucleic acid vaccines (mRNA, DNA vaccines)
- Cell line: Microbial, Cell culture, CHO, VERO, Sf9 insect cells etc

BZTRACKS - flexibility
Facility equipment enhancement: Full customization
Repurposing existing facilities: retrofitting existing hardware/software with PAT, process sequence changes

BZTRACKS – Speed & Cost
New Green field facility: design and build in modular, semi-knocked-down architecture
Capacity for manufacturing turnkey solution for Smaller, more production plants: mRNA or high scale facility till 25 m3 bioreactor
Build, Operate and Transfer (BOT) with collaborative approach

BZTRACKS- training
Process integration views in turnkey project

The products are designed, engineered & manufactured to suit customers GMP facility. Customer can view the blue print of the equipment designed as per their existing, retrofitted or new facility requirements.
Automated turnkey facility projects views executed
Pharma 4.0. New Hybrid integration (HI) approach

A Pharma 4.0 oriented Product solution From BIOZEEN

Central Database Management
Universal data collector
Asset Management/Preventive maintenance
Process management & manufacturing records.
Smart sensors & management
Alarm logging & notification services
Energy Management
Smart application: -Remote Desktop, web, mobile visualization
Industrial IoT communication.
Future state and data analysis applications-AI learning modules.
Integration with resource/material management services.
Integration with business application, ERP, MES etc.
Data Historian

- Manage all customer equipment’s.
- Master Instrument / Calibration Standards Management
- Recall Alerts via email
- Preventive maintenance
NEW INCOMING DEVELOP : BIOZEEEN PHARMA 4.0 - ADΣΩ DASHBOARD FOR FACILITY/EQUIPMENT MANAGEMENT

- Materials Module (Automatic PO)
- Wearhouse Module (Logistics)
- Marketing Module (Sales- Business- Market Demand- Discount)
- Quality & Regulatory Module (e-BMR)
- Broadcasting Module (Selective Alerts)
- Personnel Management (Wearables)
- Virtual Management (Video and Batch Trend Comparisons)
Biozeen mission for Africa support

Biozeen Objective: Help in Strengthening the local production of essential medicines in Africa with the services provides

TOTAL SOLUTION PARTNER

- Effective proposal for major unitary operations (turnkey approach from Conceptual design to PQ)
- High level of automation and process/facility integration with less personnel involved
- Full customized and innovative design and building approach
- Personal training in vaccine process technologies and GMP
- Fast delivery
- Transference and close partnership with clients
Thank You