

Energy Security

Food Security

Case Study of the Joburg Fresh Produce Market

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10th August 2022



Key Question ?

Given a rapidly changing climate with increasing human activity, can we

RESET *our thinking in providing energy security for all ?*



Potential Answer

IOT & Big Data Markets Cash Flows

*Collate all ENERGY resources;
markets will price and trade the resource;
markets are driven by supply & demand, choice &
satisfaction, transparency & investors*



Joburg Fresh Produce Market

Hosts the market platform for Competitive and Bilateral Trading and Dispatch of Fresh Produce across SA and SADC

Consists of Financial and Physical Products and Services

Why Joburg Market ?

- ❖ Similarities to Energy & Water Pools
- ❖ Effective distribution and utilisation of resource
- ❖ Established, Owned and Managed by Government

❖ Market has delivered Significant Benefits

❖ Food Security

- ❖ Affordable – Price Discovery occurs at the Market, Driven by Supply and Demand; Lowest Cost of Fresh Produce
- ❖ Quality Produce; best quality for best price
- ❖ Nutritious; farmers are continuously driven to bring the best to market

❖ Private Capital Driven Investments in the Complete Value Stream

Farms, Transport, Distribution Channels, Food Processing and Beneficiation Factories



Joburg Market

- ❑ **Survived the test of time – 123 years strong**
- ❑ **Financial Success; High Liquidity**
- ❑ **Stable Business; Low Risks/Shared Risks**

- ❑ Valued by Stakeholders
- ❑ Mega Farmers testify fresh produce markets played a critical role in their establishment
- ❑ Serves Farmers of all sizes; Ideal Market Platform for emerging and small farmers

- ❖ **Industry Development**

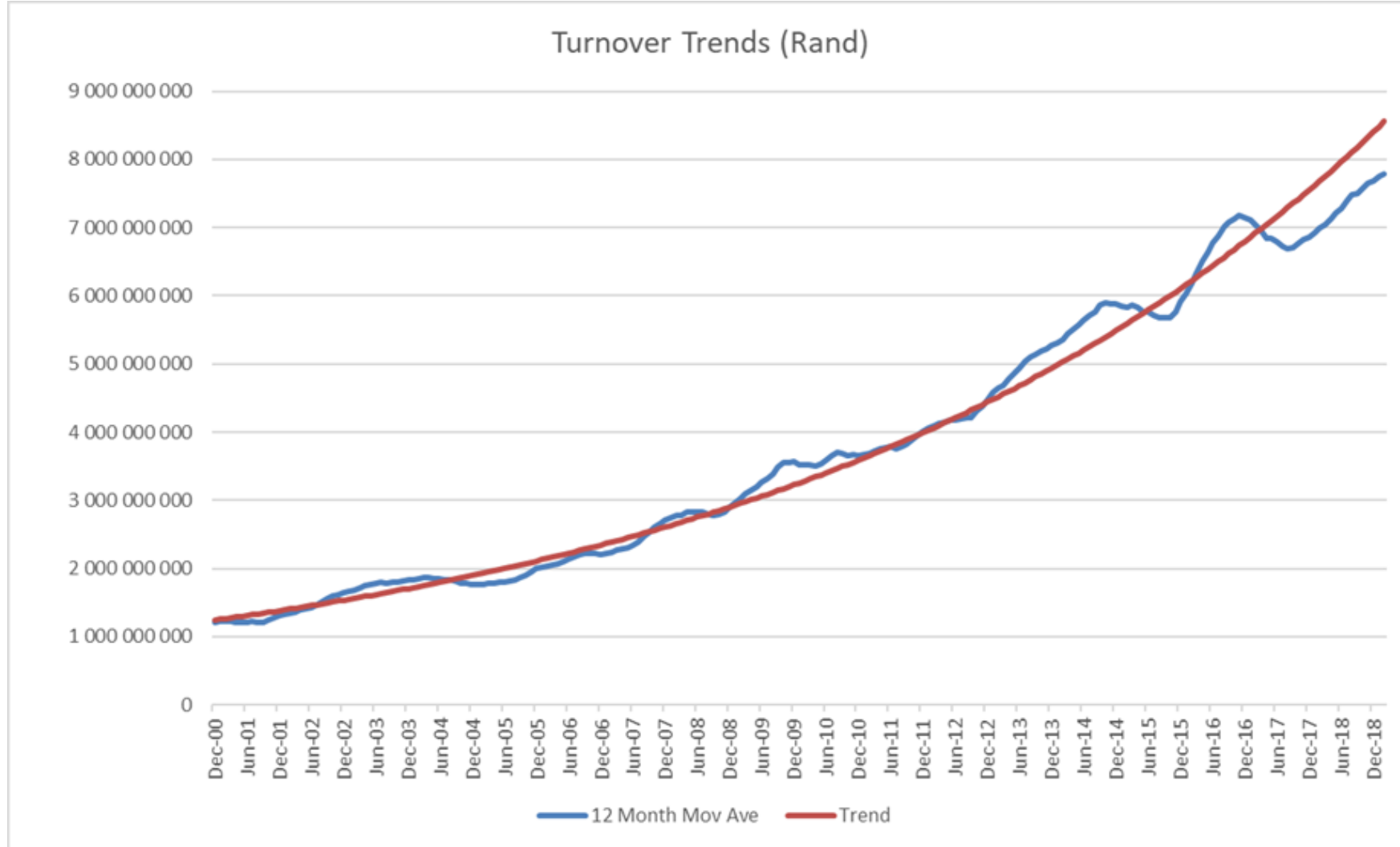
- ❖ Internationally Competitive
- ❖ Exports - Citrus, Avocados, Macadamias, Apples, Pears, Grapes,

- ❖ **Employment** : Jobs for all categories of workers; unskilled to skilled; from generalists to specialists

- ❖ **Economic Development** : City to Province to Country to Region to Continent

- ❖ Joburg Market manages 50% of all of South Africa's Fresh Produce
- ❖ Joburg Market : Gateway to Southern African Customers





Food Security Assured

Joburg Market does not own the fresh produce or the farms or the trucks and distribution networks; neither does it provide for or takes any ownership, accountability or responsibility for capital, debt or operating cash for fresh produce or fresh produce infrastructure establishment, development, operations and maintenance.

*Daily, it takes its share of the trade as Market Commission;
daily turnover R47 million peaked 17 Dec 2020
annual turnover now approaching R 10 billion
Commission to the City now approaching R0.5 billion annually.*

Energy Security

Demise of the Supplier of Last Resort
Emergence of Markets

Energy : R/kWh

Ancillary Services : R/kWh

(load following, operating reserves, reliability reserves, reactive power management, scheduling and dispatch, power loss management)

Multiple Energy Carriers : Electricity, Gas, Hydrogen
SDG driven Nexus of Energy, Water, Food, Waste...Solutions

Bilateral, Competitive, Physical, Financial

IR4 DRIVEN Confluence of Physical, Biological, Technological Factors

Energy Security

Demise of the Natural Monopoly

BEST EXAMPLE : PEOPLES REPUBLIC OF CHINA

STATE POWER = SGCC + CHINA SOUTHERN + SNTPC + SPIC + ...

ALL PRIMARY ENERGY RESOURCES WELCOME

(THERMAL COAL, NUCLEAR, NATURAL GAS, HYDRO, WIND, SOLAR, BIOMASS)

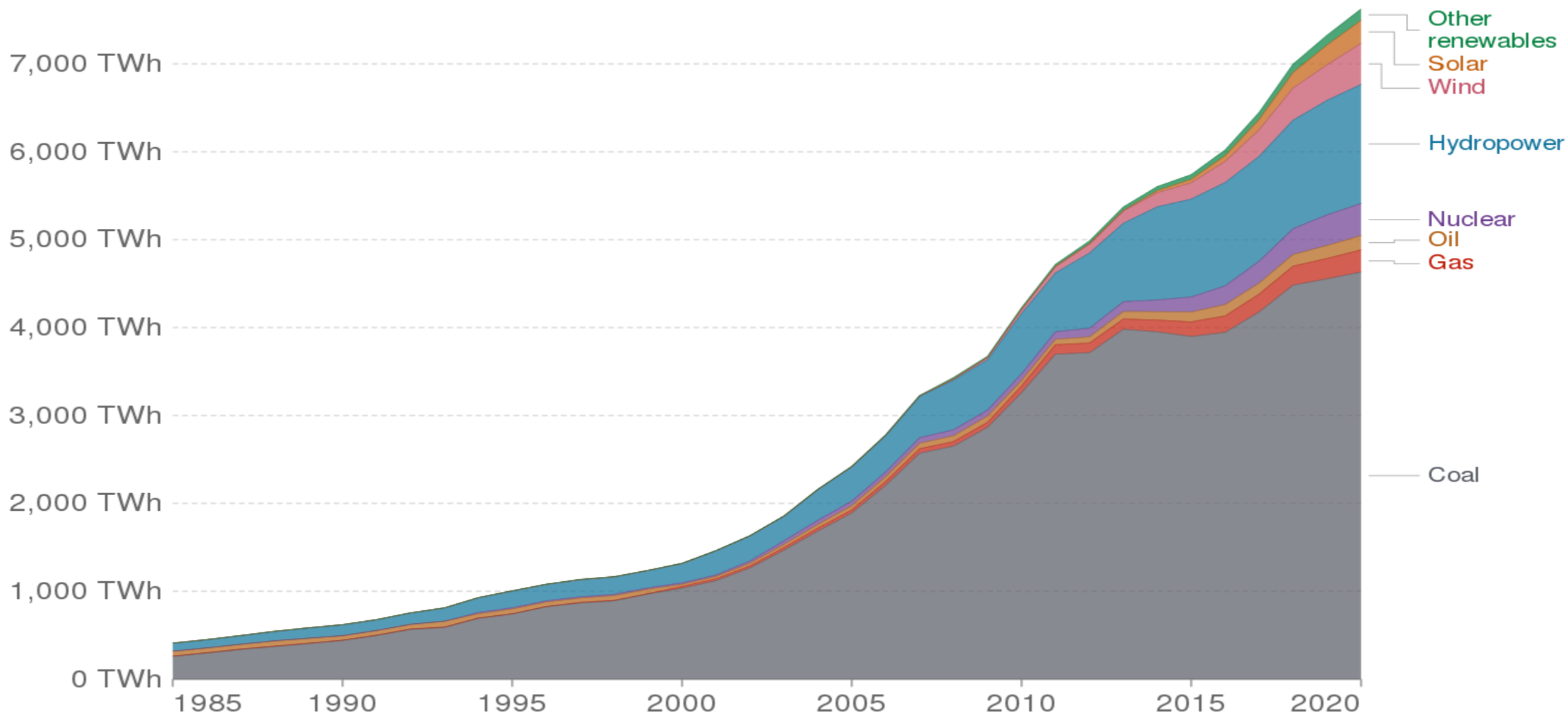
1989 : 100 GW; 1995 – 200 GW; 2022 : GREATER THAN 1000 GW

Thermal Coal 65%, followed by Hydro, Nuclear, Wind, Solar, Biomass

NET ZERO UNFCCC - 2060

Electricity production by source, China

Our World
in Data



Source: Our World in Data based on BP Statistical Review of World Energy & Ember (2021)
Note: 'Other renewables' includes biomass and waste, geothermal, wave and tidal.





Thank you