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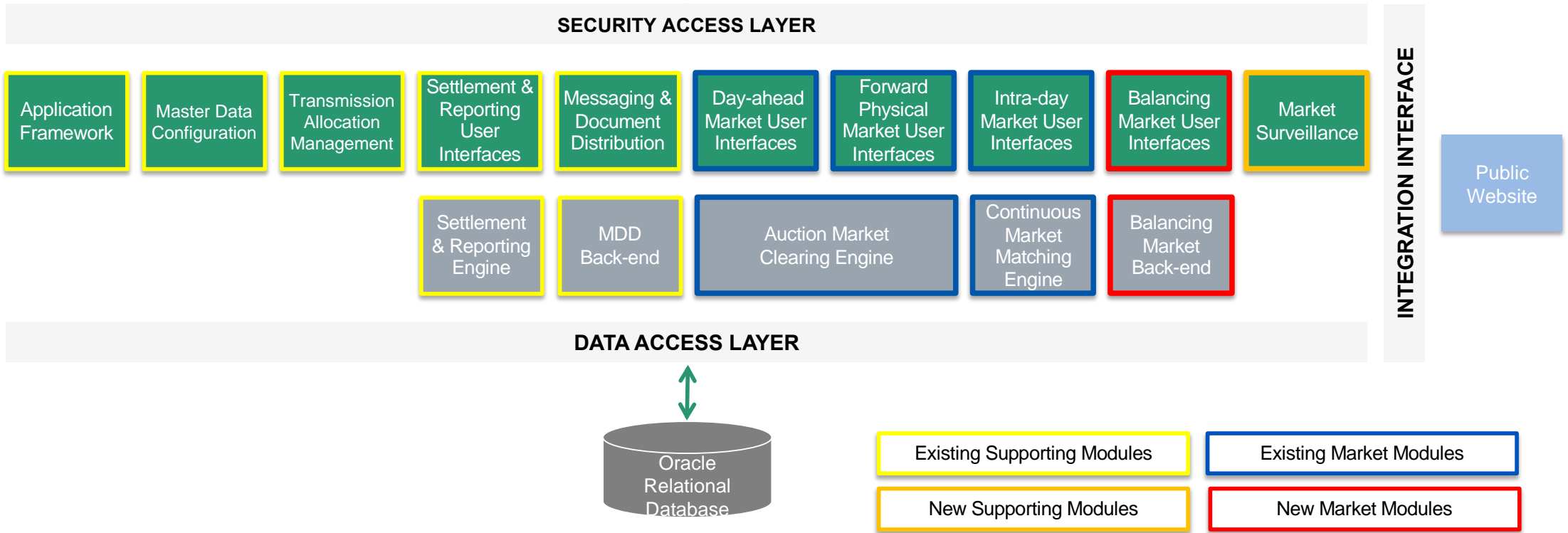
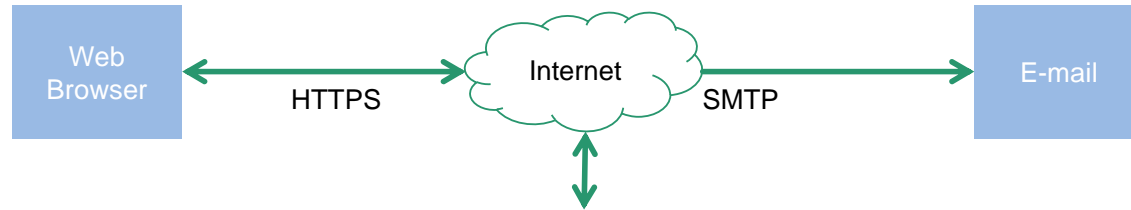
MSB and SAPP Market Trading Platforms

A practical demonstration of the platform

GET.transform is supported by



Overview of MTP Modules



Main roles in the system



Traders

- Submitting orders (Bids and Offers) in the different markets.
- Verifying the Market Results

Transmission System Operators (TSO)

- Providing information regarding the **planned** state of transmission interconnectors
 - Total Available Transmission Capacity (TTC).
- Providing information regarding the **operational** state of transmission interconnectors
 - “Actual” Available Transmission Capacities (ATC)

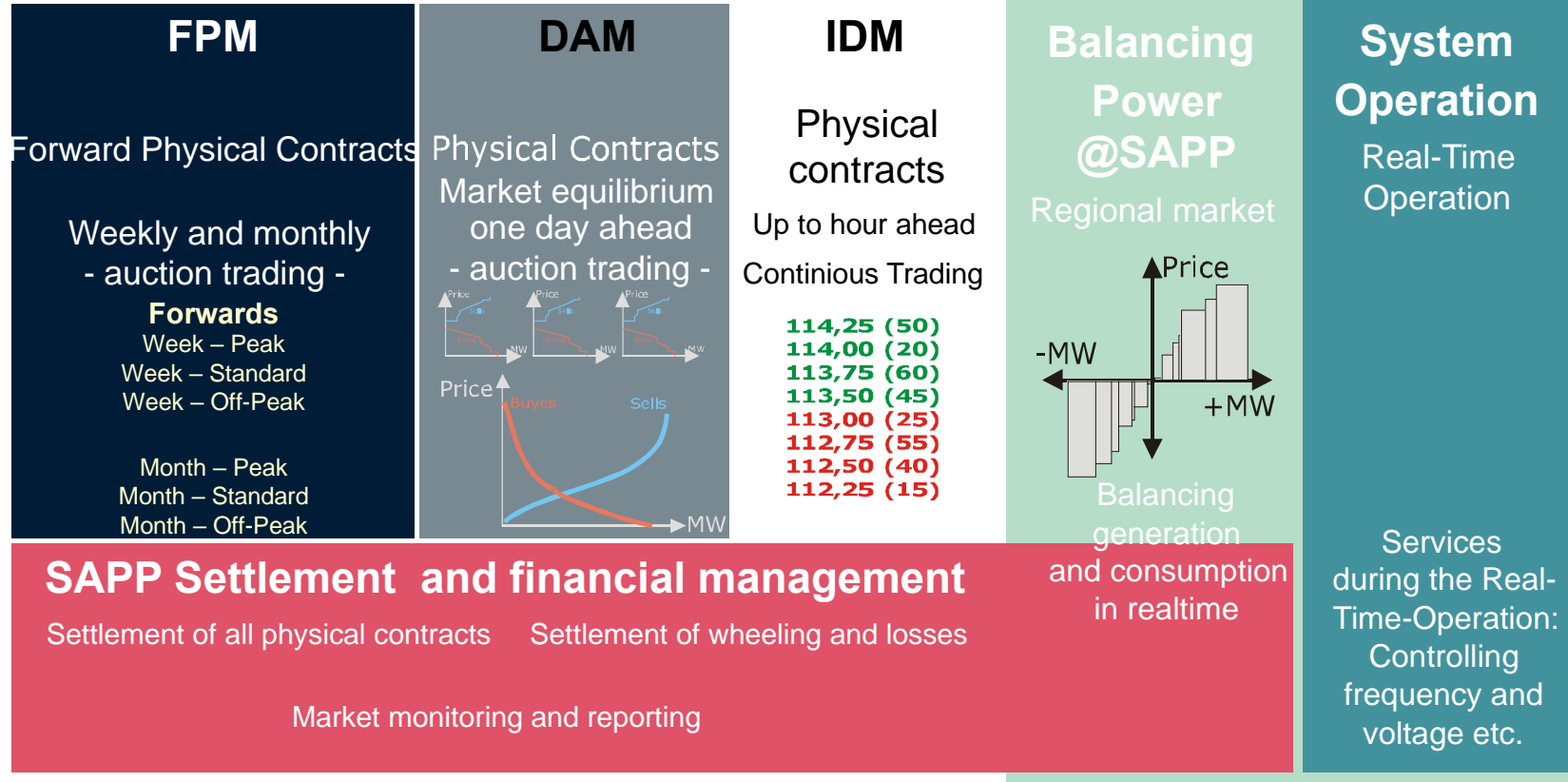
Bilateral Nominators

- **Bilateral Contract Reservations:** Energy scheduled for delivery (transfer) on all bilateral contracts.
 - Required for Transmission Capacity Allocation Management
- **Final Bilateral Contract Nominations:** After the fact agreed energy delivered on bilateral contracts.
 - Required for the Settlement of Imbalances

Market Operator

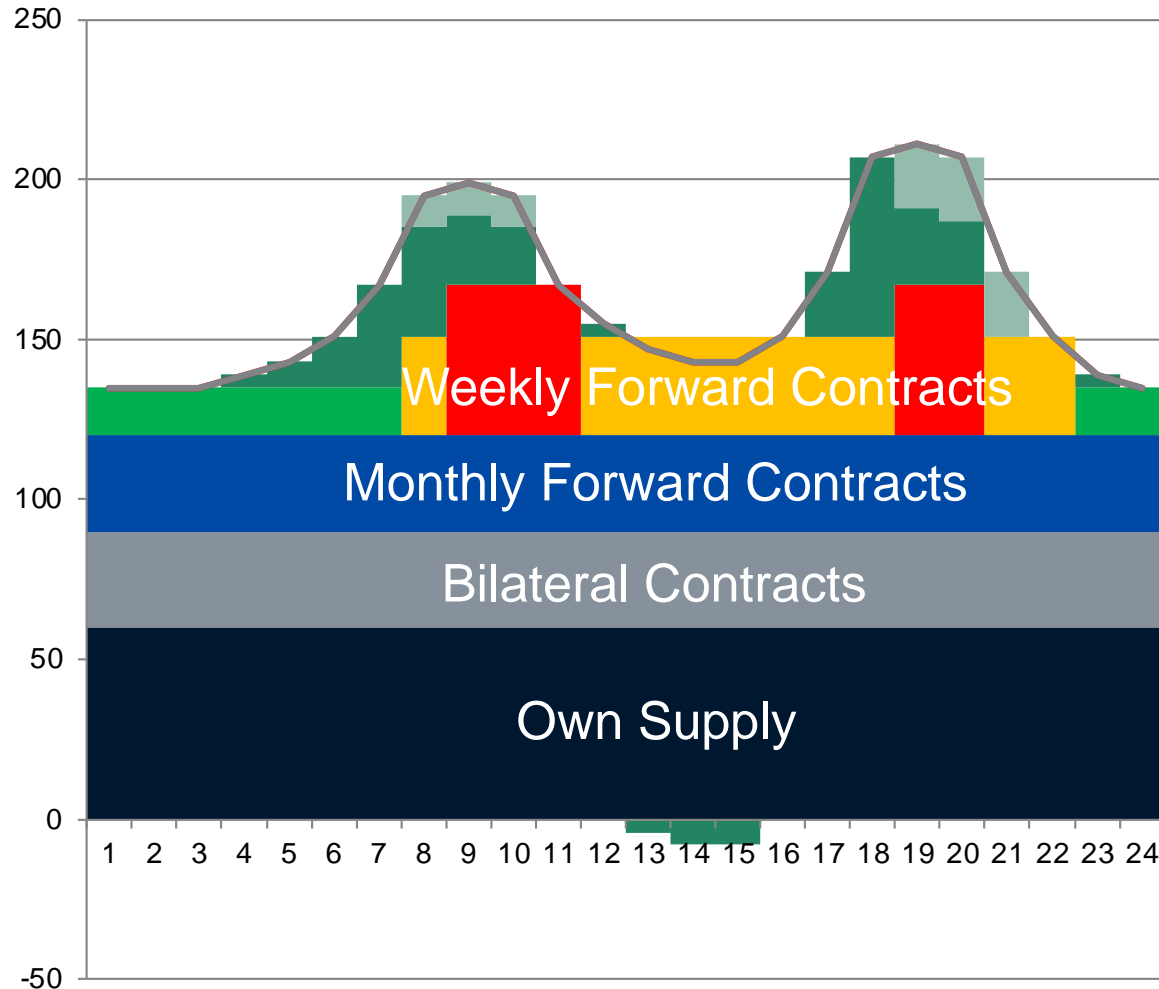
- Ensuring the smooth operation of all markets including:
 - Pre Market Clearing Activities
 - Market Clearing Activities
 - Post Market Clearing Activities

Overview of SAPP Markets



Role of different markets for supply

Balancing on the Day – Hourly Contracts



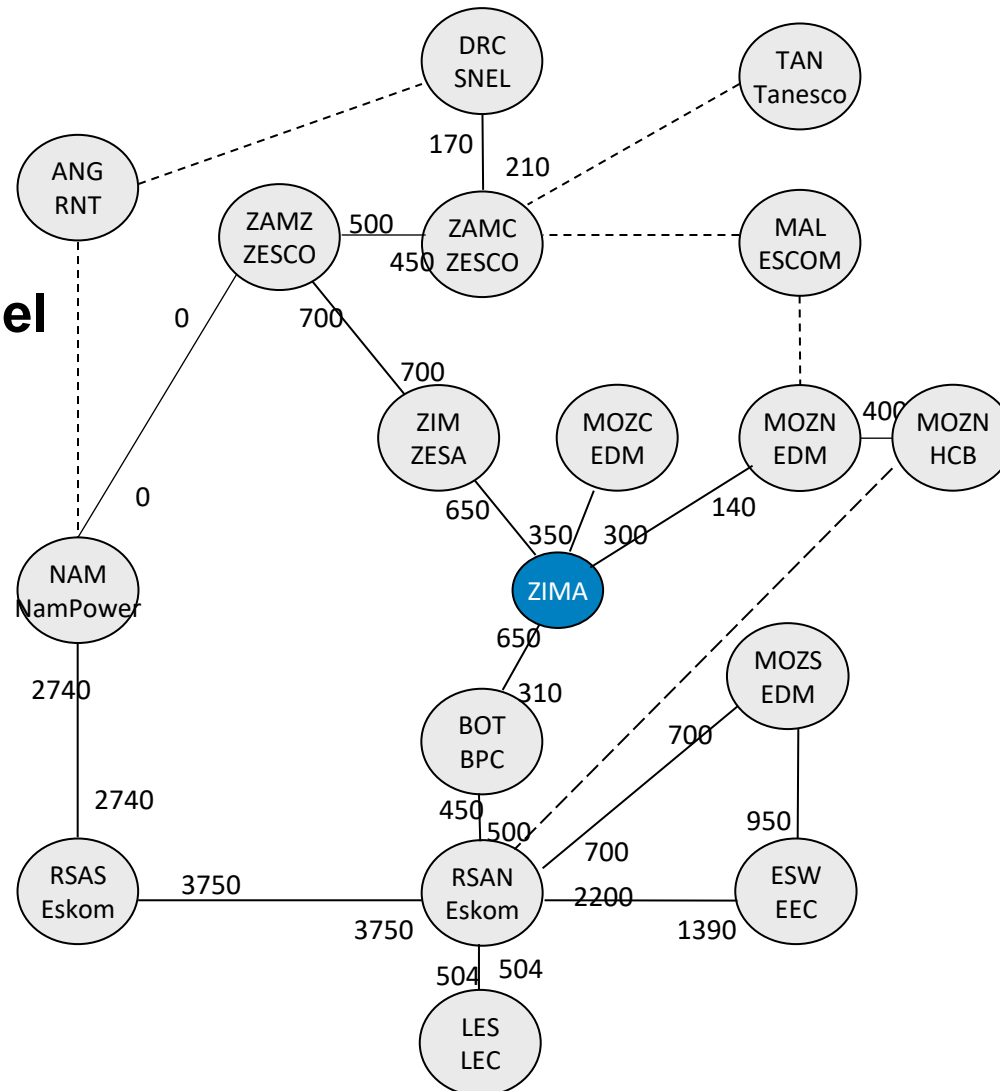
- IDM Trading
- DAM Trading
- Weekly Forward Trading (OP)
- Weekly Forward Trading (TD)
- Weekly Forward Trading (PK)
- Monthly Forward Trading
- Bilateral Contracts
- Own Production
- Demand Forecast
- Total Supply

SAPP Market area model



SAPP Trading Area Model

- Power line for open for DAM
- - - Power line not built
- - - Eskom internal power line



Layout of presentation

1. Types of Contracts
2. Trading Approach
3. System Sales and Purchases
4. Trading Opportunities

TYPES OF CONTRACTS

1. **Bi - lateral Contracts**
 1. **ZESCO (180 MW)**
 2. **Eskom (100 MW)**
 3. **ZESA (80 MW)**
2. **SAPP Market**
 1. **Day Ahead Market (DAM)**
 2. **Intra Day Trading**
 3. **Balancing Market**

TRADING APPROACH

1. **Price orders are determined as follows:**
 1. **Do a market study to determine previous day sales**
 2. **Place bids based on the current market price**
 3. **The aim is to cover highest Gx cost**

TRADING APPROACH

1. **NO Trading on DAM and Intraday for the months of May and June**
 1. **Increase in Renewable Energy (PV Solar installations)**
 2. **Kunene river flows allows for excess generation during the standard hours of the day**

System Purchases



| | 0 | 200 | 230 | 300 | 400 | 550 | 650 | 700 | 850 | | 900 | 1100 | | 1300 | 1400 | 1500 | 1600 | 1800 | 2200 | 2300 | 3000 | 4500 | 4600 | 5000 | 5500 | 5600 | 5950 | 6000 |
|----|----|-----|-----|-----|-----|-----|-----|-----|-----|----|-----|------|----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 1 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 16 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 17 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 18 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 19 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 21 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 22 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 23 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 24 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

TRADING OPPORTUNITY

1. Hydroelectric generation and PV Solar installations
2. PV Solar Installations with Battery Storage
 - Combined to regulate MW Output