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DEUTSCHE ZUSAMMENARBEIT

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

الشركة القابضة لمياه الشرب والصرف الصحي

وزارة الإسكان والمرافق والمجتمعات العمرانية

Nile Delta Water Management Programme (NDWM)

Egyptian experience in application of TSM Egypt

Fayez Badr
Technical advisor
Fayez.badr@giz.de
#01229007111

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What is TSM Egypt ?

- A system originally developed by the DWA & DVGW to support companies in meeting their regulatory obligations
- In Germany; it is called Technical Safety Management DWA TSM
- TSM Egypt started in 2009, aiming at developing the W/WW facilities to reach conformity to the Egyptian regulations and operation requirements.

Application area
Human resources
Occupational Health and Safety
Operation
Maintenance
Quality Assurance and Quality Control
TSM Egypt

Development Process

- Audit, Verification and Certification process and implementation
- Follow up on action improvement plans
- Establishment of Action plan, Needs and Responsibilities
- Assessment of Existing Situation at plants
- Development and Review of TSM requirement
- Development of Internal standard based on National O&M regulation and codes

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TSM Egypt

Main activities & Achievements

- Replicate the Egyptian experience to issue TSM ARAB and TSM Jordan.
- Stablish TSM EGYPT inspector's department and Certify 20 inspectors.
- Handing over TSM to HCWW

TSM Benefits

1. Product Quality
2. Customer Satisfaction
3. Employees and Leadership Development
4. Operational Optimization
5. Financial Viability
6. Infrastructure Stability
7. Water Resource Adequacy
8. Stakeholder Understanding and Support

Main success stories of TSM Egypt

- Assessment of O&M expenses
- International Professional Skill Competitions
- Awareness mechanism on OHS requirement

Power saving

- The average energy saving per cubic meter is equivalent to **30 W out of 350 W**.
- The value of the savings achieved in the (TSM) facilities, which has a treat about ten million m3 per day, is **108 GIGAWATTs per year**,
- The estimated cost about **120 million pounds per year**.

Conclusion

- If the TSM Egypt is applied to all facilities nationwide, which produce approximately **28 million m3/day**,
- the value of savings is equivalent to **306.6 GW / year equivalent to 337.3 MP/y**

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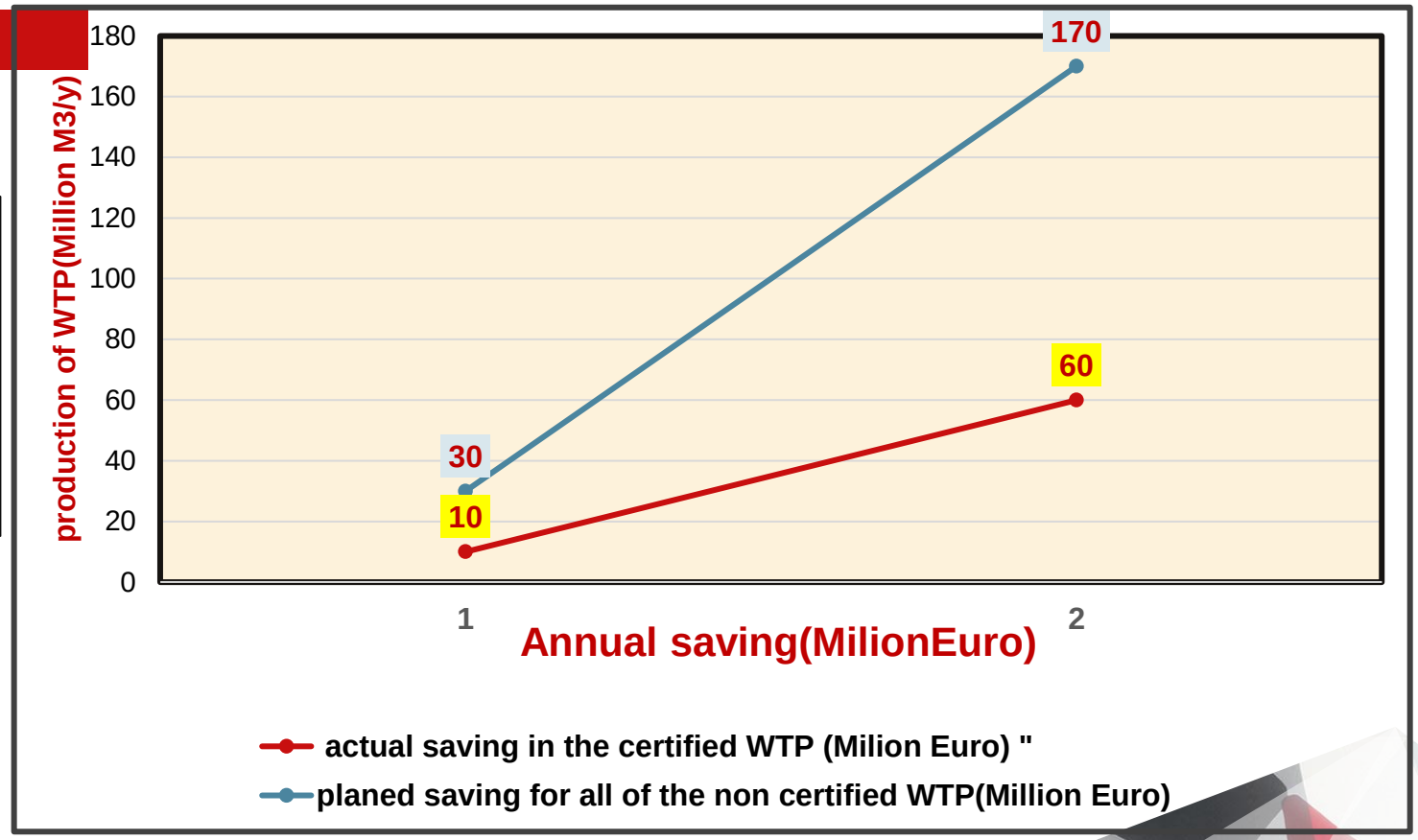
Actual & planed Power saving(M Euro) against water production



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www.dwa.de

IFAT resources. innovations. solutions.

DWA Klare Konzepte. Saubere Umwelt.

International Professional Skill Competitions at IFAT 2014 & 2016&2018

Three Egyptian teams at IFAT-2014

Ranked 5th, out of 18 International Teams

GIZA team at IFAT -2016

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Develop Capacity Building Programms and Awareness Mechanism on OHS

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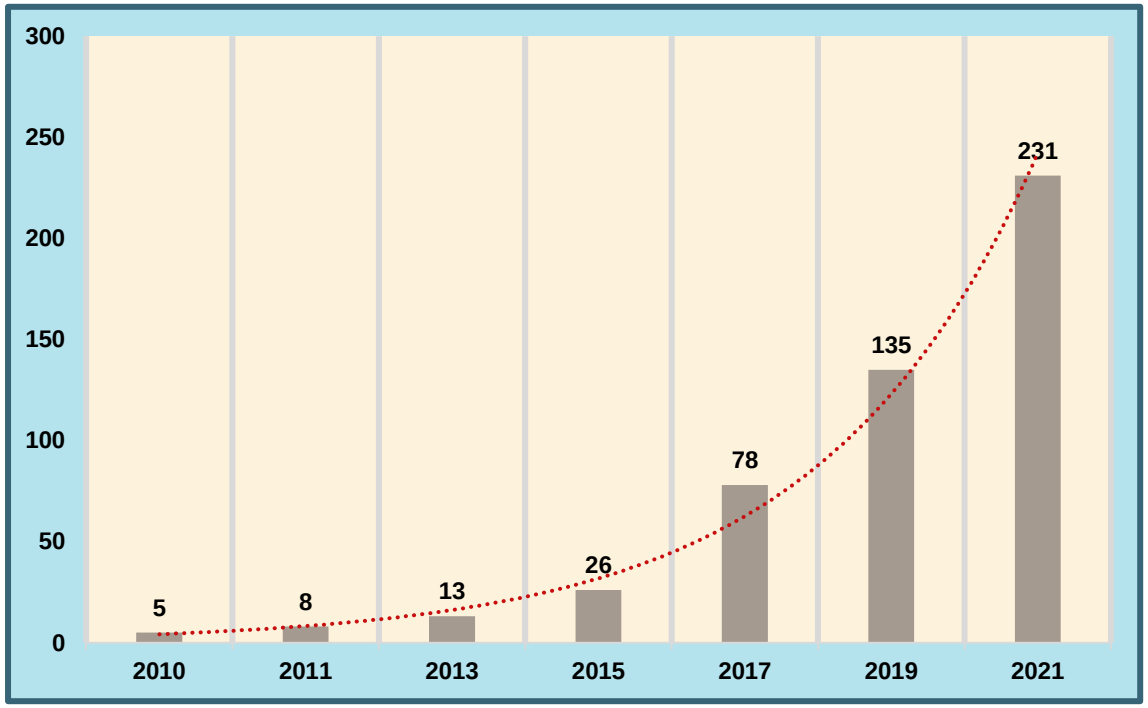
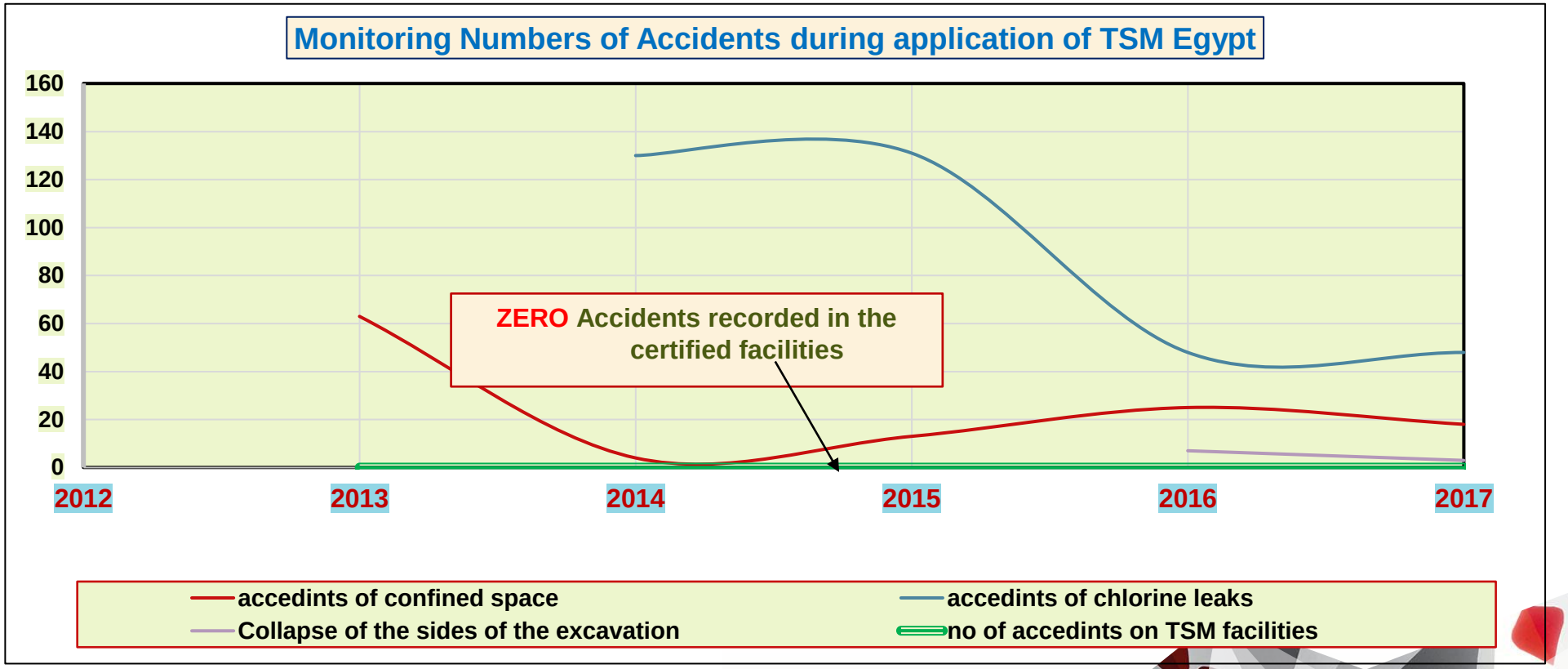
No of TSM Egypt facilities from 2010-2021



Total TSM facilities	=	**231**
WTP	=	**131**
WWTP	=	**87**
Water supply network	=	**4**
Wastewater network	=	**9**

Accidents before and after TSM EGYPT



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Impact of TSM Egypt
Secure water intake

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Before

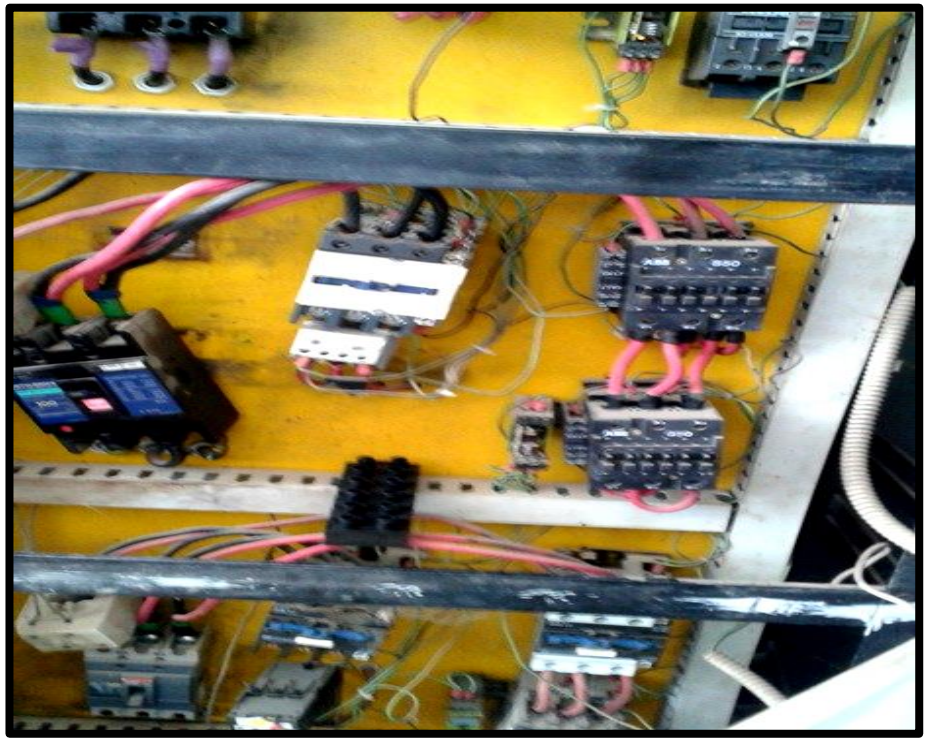
After

Impact of TSM Egypt
Secure walkways

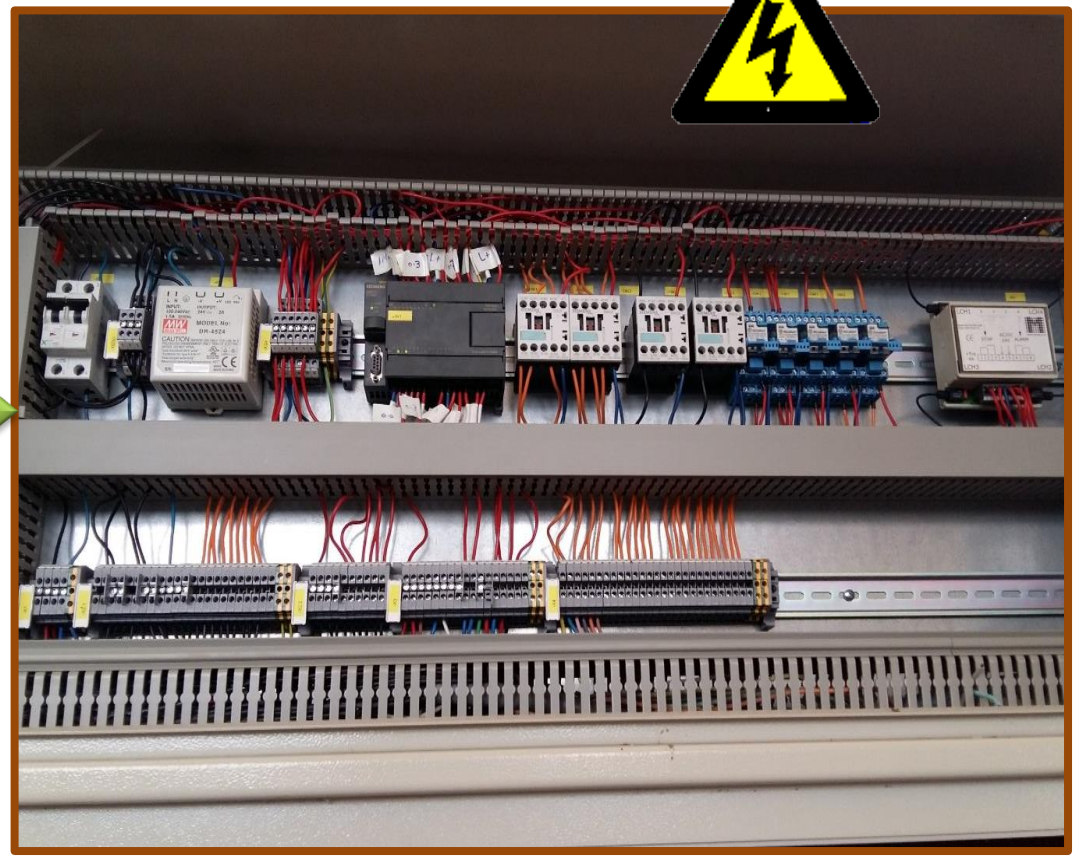
Before

After

Impact of TSM Egypt Secure Control Panel



Before



After

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القصاصة

مسئول!

«الكلور» يأكل محاصيل ٧٠ ألف فدان بالمنتزه

No accidents recorded for any of TSM facility

Impact of chlorin leakage on crops
Damage of 70.000 Acre

Before

Utilization of neutralizing towers and chlorin repairing kits

Action

After

Ongoing activities of TSM Egypt by our counterpart

- **Updates and issue TSM Egypt 2021**
- **Issue TSM Egypt for ultrafiltration WTP**

Ongoing activities of TSM Egypt by NWWM

- **Application of QR code in the maintenance Programme (Master)**

Author:
Maha Khallaf, Cairo

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Address:

Holding Company for Water & Wastewater
Water Treatment Plant, Corniche El-Nil, Rod El-Farag,
Cairo, Egypt

Email: maha.khallaf@giz.de

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