Policies for appropriate pathways in energy and sustainable industrialization

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– Gaps in policy and the Innovation system
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Introduction

- Sustainable Energy pathways (SDG 7) (Energy Access, Energy Efficiency & RE)
- Drivers for RE: Climate change mitigation, HAP and health, energy security, energy access, income generation, job creation
- Arguments for RE in off-grid areas (lack of infrastructure for conventional energy sources)
- IREK Project focus (Solar & Wind- learning, innovation and development of capabilities)
State of learning, innovation & capability development

– SSA- largely trades in unprocessed products attributed to low levels of technological learning, skill creation an innovation (Lall & Pietrobelli, 2005)
– Most R & D institutions engaged in Agriculture rather than Manufacturing
– Supply of modern skills is inadequate and the physical infrastructure is weak and often deteriorating
– East Africa: operational capabilities needed to compete internationally in simple technologies are still lacking
– Kenya: Mostly informal sector, small businesses, focus on introducing new products rather than processes, weak innovation culture (Mendi & Mudida, 2017)
Gaps in policy for capability development (IREK WP5 Survey, 2016)

- Building capacity in the wrong places
- Absence of programmes to test competency and stimulate demand after training
- Lack of political will to support training
- Limited technical capacity (operation & maintenance for wind projects)
- Outsourcing personnel for major contracts on almost everything particularly for wind
- Political interference in project implementation
- Inadequate IPRs at the local level to protect international patents
Gaps in the Small Wind Innovation System

- The technological innovation system is weak (all 7 functions rated <2, on a scale of 0-6 where 0=non existent, 6=very strong)
- Limited availability of data for developing small wind systems, lack of technical expertise to analyse the data
- Low incorporation of wind in the 26 mini grids and yet the potential for hybridization has been established from studies (Johannesen, 2019)
- Policy documents have targets set for large wind & other RE but not small wind
- No dedicated budget for small wind, other than the installation of data loggers
- Low levels of R & D (most small wind products in the market are imported)
- Capabilities in developing countries generally lower (basic) than for developed countries (intermediate to pre-advanced) both at firm and national levels
Policy implications for small wind

– Need for increased focus on capability development to enhance national capabilities to install, operate and maintain small wind. Projects implemented should enhance local capacity.

– Better use of international linkages is necessary, with respect to tapping into the flow of knowledge and skills resulting from partnership with developed countries.

– Weaknesses in the innovation system for small wind need to be addressed to improve the fulfilment of the Technological Innovation System functions.