



## INCORPORATED ADDRESS

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### **COMMUNIQUE OF THE WELDING FEDERATION (TWF) SECOND ANNUAL ASSEMBLY AND CONFERENCE ON MATERIALS MANUFACTURING TECHNOLOGIES-MANAGING CAPACITY AFRICA, WHICH WAS HELD AT EKO HOTEL AND SUITES VICTORIA ISLAND, LAGOS 4-7, MARCH, 2024.**

The Welding Federation (TWF) held its 2nd Annual Assembly and International Conference in Lagos Nigeria from the March 5-7, 2024 under the chairmanship of Dr Timi Austen Peters, Board Chairman, Dorman Long Engineering, Nigeria. The event left behind a trail of optimism for the future of the African welding industry as it successfully provided a clear path towards a more skilled, innovative, and integrated materials manufacturing industry across the continent.

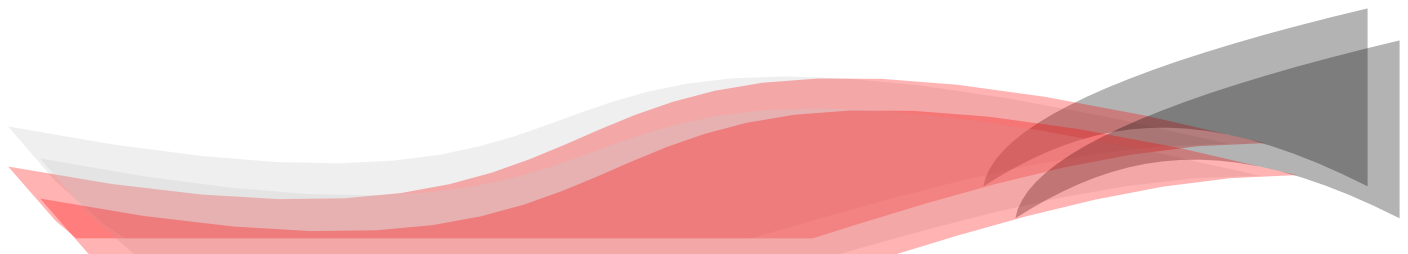
The Assembly drew experts in the materials manufacturing industry and academia, among others from across the continent to ideate, review existing frameworks and offer solutions on how to grow and optimize African content in welding and materials manufacturing for verifiable socioeconomic developments and impacts across African member states.

The event was organized by **TWF** in collaboration with Petroleum Technology Association of Nigeria (PETAN) and Oil and Gas Trainers Association of Nigeria (OGTAN) with the theme “**Materials Manufacturing Technologies-Managing Capacity Africa**. It had delegates from thirteen African and six non-African countries respectively. In addition to the national delegation, the event had in attendance leading equipment manufacturers and research institutions from both the national and global space.

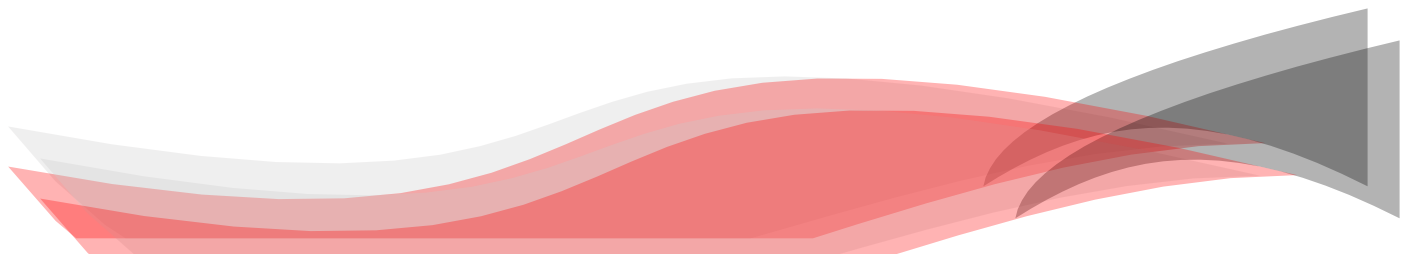
TWF Assembly 2024 featured 48 oral presentations across 8 technical sessions chaired by seasoned experts, a panel session on “**African Content Projections in Manufacturing and Energy Development – Addressing Technical and Economic Misconceptions**”, a continental welding competition and an industry visitation.

In addition to the several scientific paper presentations, the underlisted presentations addressing and discussing continental experiences on a wide range of issues across various jurisdiction provided insights and options for growing and optimizing African content in the theme of the conference.

- Strategic Policies and Initiatives: The Federal Ministry of Industry, Trade and Investment's Impact on Advancing Fabrication of Machineries and Equipment to Serve Africa's Integrated Manufacturing Market Opportunities by Permanent Secretary, Ministry of Industry, Trade and Investment, **Nigeria**.

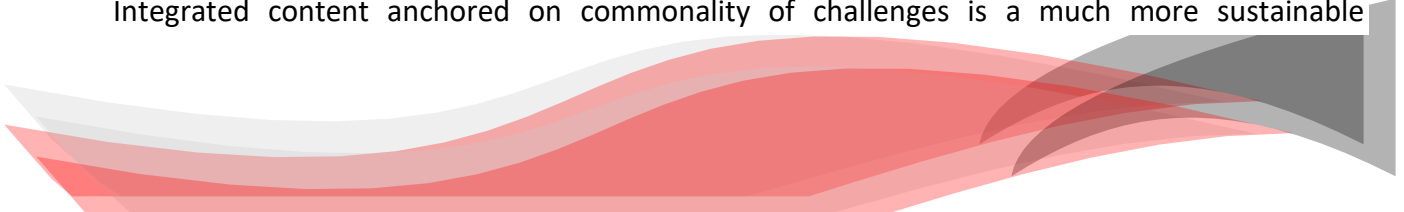


- Driving sustainable growth in Zimbabwe's metals industry- Capturing Africa's Manufacturing Space Opportunities by Engr Dosman Mangisi, Chief Operations Officer, Zimbabwe Institute of Foundries, **Zimbabwe**
- Strategic Review of Ethiopia's Welding Industry - Connecting Capacity with Existing and Emerging Opportunities Presenter Engr Matiwos Ashenafi, General Manager, Hawassa Industrial Park **Ethiopia**
- Project 3:680 - A Critical Review of Uganda's Welding Human Capacity and Solutions for Sustainable Productivity Presenter by Engr Ssezibwa Ronald, Welder Society, **Uganda**
- Manufacturing of Stainless-Steel Pressure Vessels: Challenges and Recommendations Towards Domestication of Deeper End Capacities in Africa by Engr Chris Ijeli, Managing Director, DormanLong Engineering, **Nigeria**
- Optimization of Metallurgical Characteristics in Manufacturing of NLNG 3 phase separator 7-V-1202 Amine Service Pressure vessel by Engr John Aniekwe, MG Vow Gas Engineering, **Nigeria**
- Routes to Developing Expertise in Welding Engineering and Metal Additive Manufacturing by Dr Grame Barritte, Head of Unit, Cranfield University, **United Kingdom**
- Welding Education & Research in a 21st Century: Review of Conventional, Nano and Smart Welding by Prof Benjamin Adewuyi Federal University of Technology Akure, **Nigeria**
- TWF Qualification and Certification System- Creating and Capturing Values in Africa's in Welding and Materials Manufacturing Space. By Engr Ayo Adeniyi, Executive Director, The Welding Federation, **Africa**
- Developing Future Generation Welders – Deploying 21st Century Models by Thulani Mngomezulu, Technical Applications Specialist, Lincoln Electric., **South Africa**
- Empirical Case Study on Training of Welders Virtual Welding Training System vs Traditional Welding Training Methodology by Antonio Fernandez Perez, Direct of Business Development, Seabery, **Spain**
- Technical Review of African Content Solutions and Successes in Ship Building and Repair Services - Case Study by Navy Dockyard Ltd by Rear Admiral Bolaji Orederu, Admiral Superintendent, Naval Dockyard Ltd, **Nigeria**
- Analysis of Damage Mechanism in Gas Turbine Compressor Blades Made from AISI 410 Martensitic Stainless Steel by Dr Ahmed Abdel-Aleem - Central Metallurgical Institute (CMRDI), **Egypt**
- Standardization of Welding Technology Practices-Review of Local Content Success Complimentary to African Content Market System Presenter: Engr Rose Madaki, Standards Organization of Nigeria, **Nigeria**
- Technical Session Seven: TWF Strategy Workshop -Continental Welding Development Strategy by Engr Ayo Adeniyi, Executive Director, The Welding Federation, **Nigeria**



At the end of the 2<sup>nd</sup> Annual Assembly and International Conference the following observations and recommendations were made:

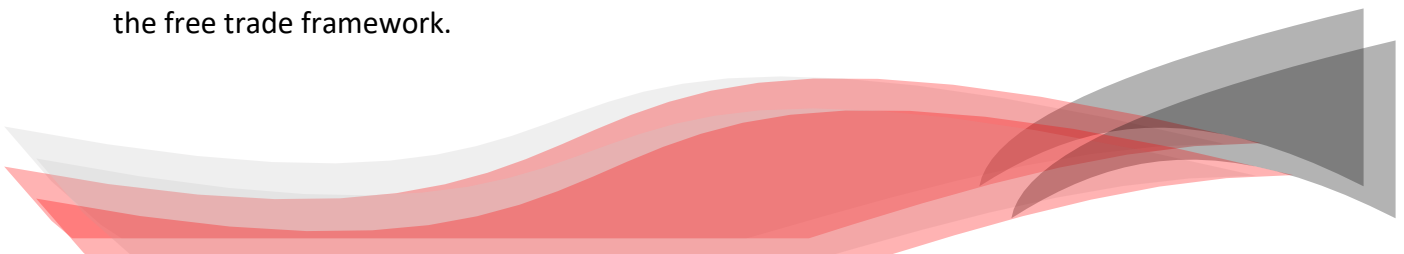
**Observations:**

1. There is a default setting of conflicting standards in our manufacturing industries. This default was not necessarily birthed by negative interests, but steadily sustained by the inability to ensure an order of convergence that serves the interest of the Africa's manufacturing industries.
  2. Approach to changing the current narrative, which is anti-African interests will best be approached from an integrated dimension. The implementation will be a combination of top to bottom and bottom to top approach.
  3. Africa needs capacity, but Africa does not completely lack capacity. What Africa lacks is functional systems that activate and engage existing capacities in the delivery of industry solutions to both existing and emerging challenges via proactive approach.
  4. TWF's African content solutions are not necessarily exclusively African, but also embraces relationships and partnerships such as its Memorandum of Understanding (MOU) on mutual recognition of schemes with Canadian Welding Bureau (CWB) which is verifiably beneficial to the diversification, increase and sustainability of productivity in Africa's manufacturing industries. Other relationships include International Institute of Welding (IIW).
  5. Newer technologies in manufacturing are not bad in themselves, but caution is required in Africa's embrace of newer technologies. Africa should retain traditional manufacturing processes with their recent modernization or automation options and a blend of newer manufacturing technologies. Over emphasis on embrace of newer technologies is likely to erode human skill and ingenuity (brain power to think and solve problems) completely with over digitization of newer manufacturing technologies. This is not good for Africa. Africa needs to have a first principle-based workforce that it can rely on in instances of eventuality. African companies should not be victims to marketing campaigns of new technologies and waste their limited funds in investing in them blindly. Partnerships within Africa are key to progress and successful adoption.
  6. Africa needs to strongly go beyond government activities to engage in deeper level integrations at the B2B, C2C, H2H interaction levels towards giving more life to AFCFTA objectives. This is the way to achieve the integration that Africa desire for development and impact.
  7. There is a growing and widening misconception of local content to the detriment of Africans. Integrated content anchored on commonality of challenges is a much more sustainable
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approach to building and sustaining capacity to address local capacity limitations across Africa's manufacturing industries.

8. Nigeria as host of TWF 2<sup>nd</sup> Annual Assembly understands the place of partnerships. The Nigerian government places high priority on instituting solutions driven manufacturing ecosystems, skills development, infrastructure building and research as key to driving sustainable socio-economic development. It is therefore desirous of working with TWF through its several TVET and technology agencies to establish a market driven paradigm shift in Nigeria's materials manufacturing industries.
9. The Nigerian government is desirous of partnering with TWF to modernize welding training, implement Africa's industry-aligned curriculum as championed, establish and prioritize continental certification programs to ensure quality and mobility of labour beyond borders in Africa, as well as promote economic viability of the welding profession to develop, attract and retain top welding talents within Africa
10. The aspiration to form the African Content Board and African Energy Bank are likely to be major game changers on the African scene if their formation is actualized and composition driven by content, and not any other consideration.
11. Government agencies in Africa more often constitute handicaps to industrial progress than progress, through policy errors. Policies by government should be seen visibly promoting a combination of national and African content as competitive equals in the energy and manufacturing industries.
12. The effect of government bureaucracies discouraging creativity and innovations can be minimized with the enactment of a one stop desk for everything in materials manufacturing across member countries in Africa

## **Recommendations**

1. Expenditures on materials manufacturing constitutes about the biggest capital loss on Africa's member state economies. As Africa brazes up its system to deepen economic models, it needs not only to implement, but to prioritize industry solutions that verifiable reflect abilities in the creation, capturing and redistribution of values from and within Africa's manufacturing ecosystems.
  2. In materials manufacturing, the efforts of African governments to align trade are now visible through the establishment of AFCFTA. The next phase to deepen the trade integration objective of AFCFTA should be constructed around deepening B2B and B2C interactions within the free trade framework.
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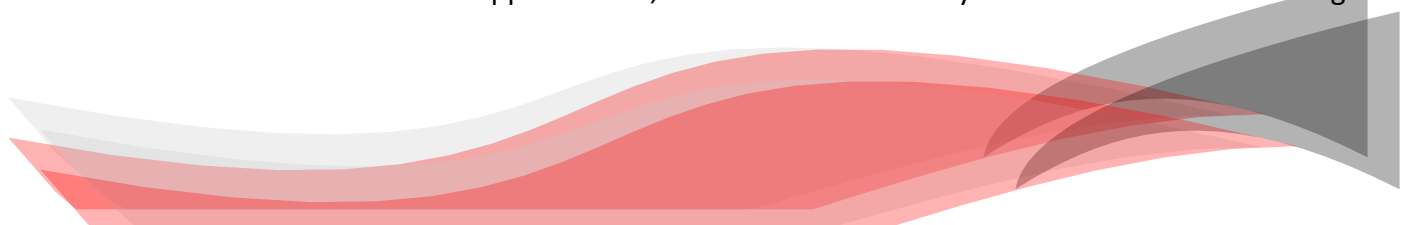
3. Industry associations, regulatory bodies and manufacturers across Africa are called upon to urgently adopt economic models that prioritize market Africa from a balanced blend of competitive and complementary view than strictly competitive. For instance, economic development is still highly benchmarked on iron and steel consumption. Africa currently produces less than 10% of its current steel consumption.

This is a huge opportunity to complement the 40 million metric tons annual consumption in Africa. There needs to be increased capacity in Africa for the production of steel to serve Africa's huge consumption market.

4. Prioritization of skill and research are urgent and critical necessity for Africa as it attempts to change the long-standing socioeconomic narratives of its member states. In welding, it is recommended that the well-outlined integrated human capacity management solutions developed by experts across TWF network member countries which does provide ready implementable solutions for Africa's state industries from shallow to deep end necessities be adopted across the whole of Africa.

The categorization, compartmentalization and complementary capture of diverse solutions platform guarantees a combination of skill sustainability, huge drop in cost of industry solutions and skilling integration to grow Africa's emerging integrated market place demand. This is indeed a unifier and a game changer that should be built upon. Information on these templates can be assessed through respective national implementation bodies across TWF members states.

5. There should be alignment of activities between TWF and institutions into academic and research services to promote awareness and increase participation in TWF's 10 years research focus which aims to increase African content in solutions development and deployment in materials manufacturing.
6. The combination of TWF's skill map and research focus are critical templates that should be urgently embraced by industries, welding institutes, research institutions, educational institutions across Africa to access an upward learning path to verifiable progress in Africa's materials manufacturing space. The skill map captures both the scope, essentiality of relevance, and prevailing industrial realities to establish a continent-based approach to welding capacity development across Africa's member states. TWF should start building networks and focal groups for professional and academic collaboration.
7. Africa's industry associations, regulators and manufacturers should join efforts with TWF's network of experts in the ongoing development of a continental manufacturing policy that identifies value chain opportunities, establishes sub system interactions amongst



manufacturers, and addresses chains of critical concerns to spur value chain champions that complement each other.

8. Regulators, asset owners and manufacturers in Africa's manufacturing industries should urgently prioritize the adoption of ISO 3834 manufacturer certification system for the multi-level benefits it offers in terms of deepening capacity of manufacturers. ISO 3834 quality requirements should be mandated as a compulsory benchmark for welding and related activities across Africa's energy, transportation, agriculture, and mining industries.

This benchmark will deepen the depth of practice, spur competitive but complementary areas of specialization that will retain and attract production opportunities, expand elasticity of capacity within Africa's industry and grow socio-economic impact.

9. Industry associations and local content bodies should encourage the rise and sustenance of continental manufacturing champions within their local industries either by self-development or by collaboration. Indigenous local manufacturing champions visible on the continental scene is guaranteed to ignite multi-level activities to the benefit and sustenance of SMEs in local manufacturing spaces.
10. TARC is a critical infrastructure that complements the integrated trade objectives outlined in agenda 2063. Governments and their agencies should prioritize this project for the deep end and diversified benefits it offers to Africa and Africans.
11. Africa's member states need to implement frameworks that advance participation to control Africa's manufacturing industries. These industry solutions should truly identify, capture and redistribute values from its manufacturing activities for sustainable job opportunities across diver specialization space. The African Union (AU) role is significant in this aspect and steps are needed aiming at integrating TWF plans in their organizational structure.

Opening address and goodwill messages by:

- Opening address by H.E Uba Maigari Ahmady, Honourable Minister of State for Steel Development
  - Nicholas Odinuwe, Chairman, Petroleum Technology Association (**PETAN**)
  - Engr Kanya Iwuchukwu, Director, Manufacturers Association of Nigeria (**MAN**)
  - Engr Prof Abubakar Zubair, President, Council of Regulation of Engineering in Nigeria (**COREN**)
  - Engr Magaret Oguntala, President, Nigerian Society of Engineers (**NSE**)
  - Prof Thomas Boellinghaus, President, International Institute of Welding (**IIW**)
  - Engr Bijimi Gaiya, Chairman Care Taker Committee, Nigerian Institute of Welding (**NIW**)
  - Mazi Sam Onyechi, President, Oil and Gas Trainers Association of Nigeria (**OGTAN**)
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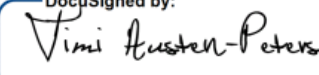
The 2<sup>nd</sup> Annual Assembly was rated an A-class conference based on the collection of speakers, quality of presentation, mix of technical and social activities packed in a single event. There were Technical Network Body (TNB) meetings on different subject matters during the conference.

A note worthy moment was the nomination and election of Dr Hamed Abdel-Aleem of Central Metallurgical Research and Development Institute (CMRDI) as Acting President of The Welding Federation by the Board of TWF. The contributions both of Dr Hamed Abdel-Aleem as an individual and CMRDI as an organisation has been instrumental to the progress of TWF.

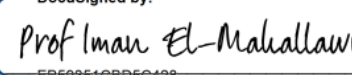
The maiden edition of TWF Continental Welding Competition with focus to expand the elasticity of welding skills in Africa to serve both current and emerging job demands required by the industry was held with participation of over 30 combined participants across two categories of welding process competition from seven countries.

The hybrid event was attended by over 400 participants comprising of over 80 percent industry participation from leading manufacturers and research institutions from the national, continental and global space.

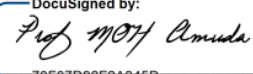
The climax of TWF 2<sup>nd</sup> Annual Assembly and Conference was the transfer of TWF flag to Ethiopia as host of TWF 3<sup>rd</sup> Annual Assembly and Conference 2025.

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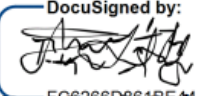
**Dr. Timi Austen Peters**  
Board Chairman,  
DormanLong Engineering Ltd, **Nigeria**

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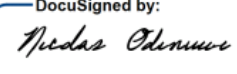
**Prof Iman El-Mahallawi.**  
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The British University, **Egypt**

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**Prof M.O.H Amuda**  
Immediate Past Head of Department,  
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University of Lagos, **Nigeria**

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**Dr., Engi. Selamu Yisihak Handiso**  
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**Nik Odinuwe**  
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**Dr Devon Hagedorn-Hansen**  
Managing Director  
HH Industries, **South Africa**