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PRiCiNG QUALiTY

COST DRiVERS AND VALUE ADD iN THE OFF-GRiD SOLAR SECTOR

Photo: M-KOPA

EXECUTiVE SUMMARY

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Photo: Fenix International

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The off-grid solar (OGS) sector is currently providing energy access to 108 million people[1] and delivering remarkable social, economic and environmental impact. Some countries have combined supportive policy environments with a dynamic private sector and have achieved rapid growth. There is truly a historic opportunity to achieve universal energy access. However, the sector needs to address worrying market trends; non-quality verified (non-QV) OGS products are estimated to represent 71 percent of the market. Healthy competition is good for customers, but a race to the bottom that fails to deliver customer value and satisfaction is not serving anyone. **GOGLA and HYSTRA partnered on this research to better understand the cost drivers of quality premiums, and inform policymakers of opportunities to promote affordable, quality products to off-grid and poor-grid families**.

Quality matters: it is a necessary condition for bringing social and financial benefits to families and enabling a sustainable expansion of OGS. Quality is not limited to product characteristics. Quality is delivered by companies who sell high-performance products, but also offer effective services to consumers beyond sales (e.g. effective after-sales and consumer finance) and who adopt responsible business practices, including paying their taxes. In 2017, the Lighting Global Quality Assurance (LGQA) team led research on top-selling non-QV solar products sold in five markets across Africa and South Asia. All 17 tested products failed to meet the Lighting Global (LG) quality standards. Poor quality can be detrimental in several ways: consumers not only miss out on the promised benefit that they paid for, they also often end up paying more to replace defective products than they would have otherwise paid for a higher quality product. Furthermore, the lack of trust that poor quality fosters in the sector hinders the market's growth for all players.

Yet, quality also comes at a cost: quality products are generally more expensive (to varying extents) than non-quality products offering similar *functionalities* (vs. similar *quality*). Price differences of 4-5x have been observed. The comparative analysis between QV and non-QV solar home systems (SHS) sold in Kenya shows that, for any QV product, consumers can either purchase a non-QV product with similar capacity at a significantly lower price, or a significantly higher capacity non-QV product at a similar price.

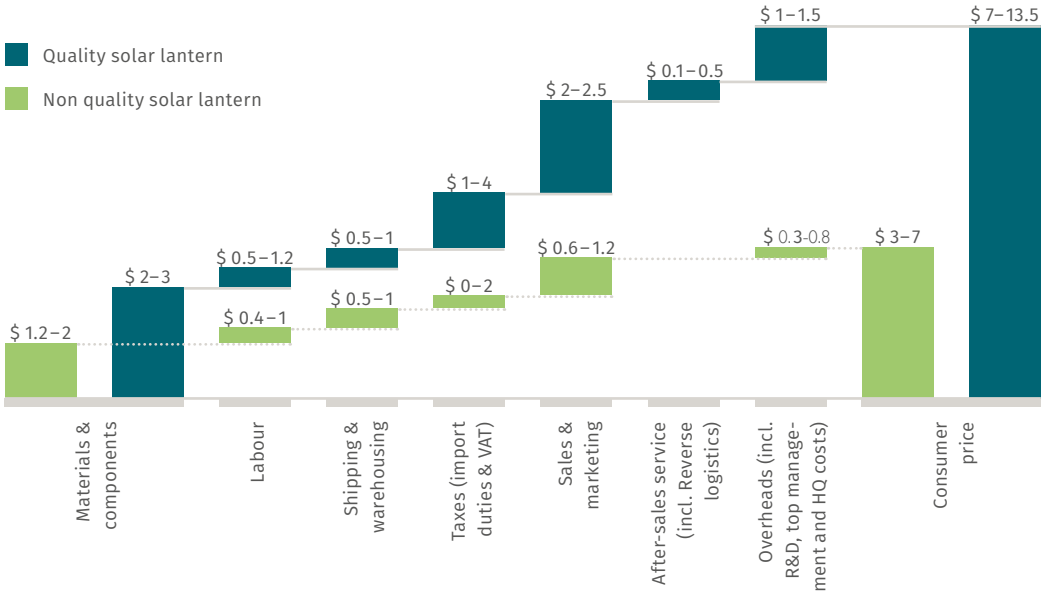
For this report, we conducted a cost breakdown analysis based on desk research and past Hystra in-depth case studies of 20+ solar players among both non-quality and quality products. We further pressure-tested those hypotheses with 15+ OGS companies and experts. As a caveat, these analyses are indicative of trends, not reflective of a given product or country. They also do not reflect the wide variations in both quality and price points that exist within each of the quality and non-quality categories. Yet, they provide validated insights into why quality costs more.

Upstream, the primary sources of the quality premium (~25per cent of premium for solar lanterns; ~15 per cent for SHS) are the cost of quality components – namely batteries – and taxes. Prices of components are expected to be reduced by 14-30 per cent in the coming two years, and programs such as Low Energy Inclusive Appliances (LEIA) are working on developing more efficient appliances that could make a significant difference in lowering prices. Quality players pay higher taxes, while non-quality products are often sold via leaner - sometimes informal - routes, including retail and open markets. Narrowing the gap implies enforcing tax payments more consistently for all players.

1 GOGLA (2019), Global OGS Market Report Semi-Annual Sales and Impact Data, July-December 2018

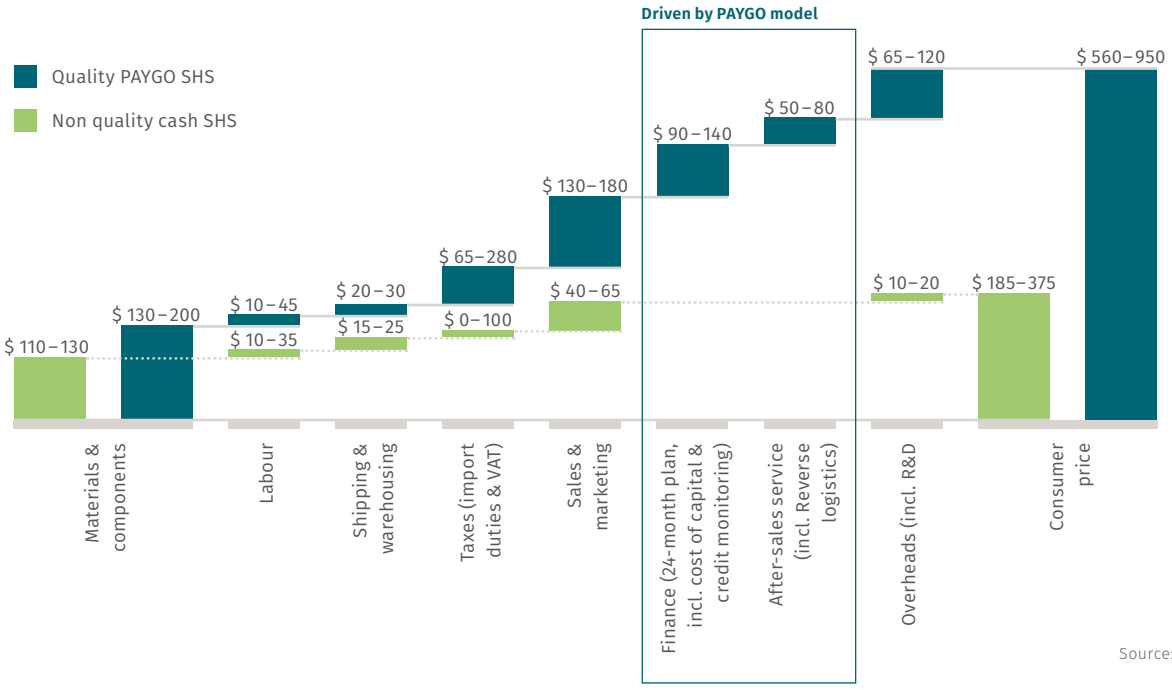
Downstream, after-sales services and financing, which bring critical durability and affordability benefits to consumers, drive the quality premium, in particular for Solar Home Systems (SHS) (35 per cent of the total premium). For both solar lanterns and SHS, the remaining quality premium is found in the overheads and distribution categories; many of the companies selling quality products have heavier research & development (R&D) expenses and a higher proportion of expatriate staff (although this is decreasing, as most companies are refocusing on profitability). They also develop costly proprietary distribution networks to reach consumers at the last mile. The question is then how to narrow the gap in these cost categories, by leveraging more efficient distribution channels and developing smart and targeted subsidy programs when the above is not sufficient.

Solar lanterns Cost Breakdown



Source: Hystra analysis

SHS Cost Breakdown



Source: Hystra analysis

Three potential areas of intervention emerge for policymakers to make quality products more affordable to consumers. These options were discussed by GOGLA and Hystra on October 2019 in Dakar, with policymakers from 15+ Sub-Saharan African (SSA) countries, at one of the Community of Champions events regularly organized by GOGLA:

1. **How to enhance public-private collaborations and develop electrification plans more likely to encourage access to quality solar products?**

    a. Integrate quality products in electrification planning and ensure better data-sharing to help solar distributors adapt their extension plans, and conversely use pay-as-you-go (PAYGO) data to inform policymakers' planification

    b. Leverage result-based financing (RBF) to encourage quality solar to focus on areas where on-grid electrification does not make economic sense

    c. More generally, propose more fora for discussion between government and the OGS sector to enhance synergies and improve efficiency

2. **How to lower the costs incurred by companies upstream by designing and better enforcing appropriate regulatory frameworks and tax exemptions?**

    a. Lower taxation is one of the most effective ways to improve affordability

    b. Clarity on the scope of exemption limits access to non-quality products

3. **How to lower the downstream costs with awareness campaigns, training programs, support of efficient, local distribution models, and reduction of financing costs?**

    a. Back quality products with more endorsement by relevant authorities to efficiently create awareness on quality products and reduce marketing spending

    b. Train more qualified technicians or pool after-sales service to lower the costs of after-sales

    c. Collaborate with donors to lower the costs of financing for local distributors

    d. Support local distributors in improving their offering and operations to lower the costs of serving the last mile

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