The following presentations were made in Nairobi on November 3, 2016, at the inaugural Off-Grid Solar Investment Academy. Recordings from the Academy will be made available at www.gogla.org by December 2016.
Contents

1. Business Planning and Financial Projections: Communicating with Investors, Paul van Aalst, RECP Finance Catalyst
2. Introduction to Term Sheets, Paul van Aalst, RECP Finance Catalyst
3. Off-Grid Solar Financing: Description of Capital Options, Andreas Zeller, Open Capital Advisors, and Alexander Bashian, responsAbility
4. Investing in PAYG companies, Dirk Muench, Persistent Energy Capital
Business Planning and Financial Projections: Communicating with Investors

Paul van Aalst, RECP Finance Catalyst
Off-Grid Solar Investment Academy

Nairobi, 3 November 2016 • www.gogla.org
Agenda

• Background
• Issues
• Seeking investment
• Proposals
• Summary
• Questions
What are we talking about?

Source: Inensus
Seeking Investments

- Assume your audience knows the basics
- Get down to the key issues and figures
- Be grammatically and factually correct
- Explain what you need the funds for
- If you are not a financial expert, find one
- A business plan must have a financial model, assumptions and returns
Your content

- No build-up required
- Get to the essence right away
- Little interest in history - strong interest in opportunity
- Add structures, diagrams and pictures (not landscapes), data and numbers
The investment process takes time

- CIO
- Investment Officer
- Investment Committee
- Entrepreneur
- Legal Advisors

Graphical representation of the investment process involving multiple stakeholders.
Documents & Time

- Business plan
- Draft Term sheet(s)
- Investment recommendation
- DD pack
- Final Term sheet
- Legal Agreements

Six - Eight Months
Plans that deliver the Essentials...

- Business opportunity
- Use of funds
- Team & partners
- Timetable
- Capital structure
- Project finance components
- Risks and risk mitigation
- Valuation
- Exit opportunities
- Evidence
Why are you asking for money?

- Project objectives dictate the use of funds
  - Timetable with costs attached
  - The budget has logical steps
  - Burn rate

- Research your numbers
  - No need to hide your salaries
  - Make it worth your while but don’t be greedy
They have a realistic timetable ...

We’re here

We need $X \text{ m to get there}
A capital structure that works ...

• How much have you put into the company and how?
  • Sweat equity or cash

• Series A or Series B Financing?

• Which investment instrument?
  • Ordinary shares
  • Preference shares (cumulative, participative, redeemable, convertible)
  • Commercial debt (risk premiums, repayment terms)
  • A combination of the above

• Propose a shareholding structure
Summary

• Use investor language
• Reread your document until it is “to the point”
• Use data, models and frameworks
• Key components need to be addressed (concisely)
• Financial models and timetables must be easily read
• Show structure and dexterity
• Address risks clearly
• Include evidence
Questions
INTRODUCTION TO TERM SHEETS

NOVEMBER 2016
In the context of closing a transaction term sheets simplify agreements. Intention is to list the basic parameters of an agreement.

Key Financial Agreements
- Equity Contribution and Shareholder agreement;
- Limited Recourse Debt agreement; and
- Power purchasing or concession agreement.

Equity agreements are often highly negotiated, meaning that no real surprises should be found in a term sheet – yet there always are surprises.

Debt agreements are more standardised.

Focus of this presentation are debt term sheets.
# DEBT TERM SHEET

<table>
<thead>
<tr>
<th>KEY TERMS</th>
<th>EXPLANATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Borrower</td>
<td>Your company</td>
</tr>
<tr>
<td>Lender</td>
<td>The Bank or FI</td>
</tr>
<tr>
<td>Facility Amount</td>
<td>Loan Amount</td>
</tr>
</tbody>
</table>
| Debt to Equity Ratio    | [70:30], subject to resource data/capacity factors. Equity to be committed to the Borrower by the Shareholders, subordinated to Lenders rights and claims. “Equity” means:  
(a) the proceeds of subscription for shares or premium paid in relation to any shares; and  
(b) the proceeds of any loans provided to the Borrower by any Shareholder affiliate / related person to the Borrower) which shall be subordinated to the Debt Facility. |
| Currency                | Yours or Hard currency                                                                                                                                                                                     |
CONCLUSION

Learn the meaning of the terms to understand the impact they have on your project.

By the time you have received the term sheet, it is too late to learn.
Off-Grid Solar Financing

Description of capital options

October 2016
Most SHS businesses are still driven by equity, with larger players accessing the debt markets.

Source: OCA industry consultations in Africa
## Capital need for off-grid solar changes based on growth stage

<table>
<thead>
<tr>
<th>Overall structure</th>
<th>EBITDA negative</th>
<th>EBITDA positive</th>
<th>EBITDA proven</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Equity / equity-like</strong></td>
<td><strong>Equity + mezz / unsecured debt</strong></td>
<td><strong>Secured debt + Initial Securitization</strong></td>
<td><strong>Increased leverage / Securitization</strong></td>
</tr>
<tr>
<td><strong>Sources of financing</strong></td>
<td>• Primarily financed by equity (seed, Series A &amp; B)</td>
<td>• Equity-like, mezz structures</td>
<td>• Secured by inventory / receivables</td>
</tr>
<tr>
<td></td>
<td>• Expensive, unsecured loans as business proof-points established</td>
<td>• On/off balance sheet</td>
<td>• On/off balance sheet</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Growing access to local FX debt</td>
<td>• Growing access to local FX debt</td>
</tr>
<tr>
<td><strong>Cost and leverage</strong></td>
<td>• Highest cost of capital</td>
<td>• High cost of capital</td>
<td>• Reduced cost of capital</td>
</tr>
<tr>
<td></td>
<td>• No leverage</td>
<td>• Low leverage</td>
<td>• Higher leverage</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Lowest capital cost</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Optimal leverage</td>
</tr>
</tbody>
</table>

**Least optimal**

**Most optimal**

Source: OCA analysis and deal experience
‘Deep dive’ into several common industry debt products

<table>
<thead>
<tr>
<th>Example products</th>
<th>Typical terms</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Unsecured loans / Mezzanine</strong></td>
<td></td>
</tr>
<tr>
<td>• Unsecured term loans</td>
<td>• No collateral required</td>
</tr>
<tr>
<td>• Loans that share % profit in addition to interest expense</td>
<td>• Higher capital cost, variable interest in addition to fixed</td>
</tr>
<tr>
<td>• Loans + warrants</td>
<td></td>
</tr>
<tr>
<td>• Convertible loans</td>
<td></td>
</tr>
<tr>
<td><strong>Secured loans</strong></td>
<td></td>
</tr>
<tr>
<td>• Inventory financing / trade finance</td>
<td>• Collateral required and debenture or similar all-asset cover</td>
</tr>
<tr>
<td>• Receivables financing</td>
<td>• Overdraft typically provided by relationship bank, often requires</td>
</tr>
<tr>
<td>• Overdraft &amp; lines of credit</td>
<td>guarantee</td>
</tr>
<tr>
<td><strong>Off-balance sheet</strong></td>
<td></td>
</tr>
<tr>
<td>• Securitizes receivables by purchasing directly from the company, without</td>
<td>• ‘Advance rate’ or LTV is measure of over-collateralization required</td>
</tr>
<tr>
<td>recourse to company’s balance sheet</td>
<td>• Typically higher implied collateral required since financier</td>
</tr>
<tr>
<td>• See next slides</td>
<td>doesn’t have recourse to company</td>
</tr>
</tbody>
</table>
Example off-balance sheet structure: how it works

Investors finance SPV and receive return if portfolio performs.

SPV pays operator total*advance rate, less cost of capital; returns residual later if no defaults occur.

SPV receives consumer payments as they are made on receivables.

Operator sells receivable to SPV; contracts to service receivable.

Operator sells unit to consumer on credit, provides maintenance as necessary.

Note: structures can vary considerably depending on investor and intermediary.
Investing in PAYG companies

Dirk Muench, PEC

Off-Grid Solar Investment Academy

Nairobi, 3 November 2016 • www.gogla.org
Introduction

Dirk Muench

- Prior background in industrial engineering and capital markets: credit risk, credit derivatives and foreign exchange.
- Co-founded PEC with Chris Aidun in 2012 to invest in and contribute to the development of the off-grid sector in sub-Saharan Africa.
  - PEC made over 10 mainly first round investments in the off-grid sector since 2012, co-founded PEG Ghana, published research, structured first securitization in 2015 for BBOXX/OIKO Credit.

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PAYG energy service companies

• PAYG companies are businesses which provide their customers with an energy asset for which such customers pay over time.
  • Some companies sell the asset to the customer – others lease the asset perpetually.
  • Micro-grid businesses can also be considered PAYG companies which lease the asset perpetually.
Why invest in PAYG companies

• **Financial return:** The PAYG business model promises 30% net profit margin at scale in a $10bn+ revenue per year market. PAYG companies are among the fastest growing companies in sub-Saharan Africa.

• **Social impact:** PAYG companies provide access to modern energy to its customers.

• **Environmental impact:** PAYG companies enable climate neutral economic development as they rely mainly on solar PV.

• **Economic impact:** PAYG companies create 1 local job per 100 customers served.
Investing in PAYG companies

General considerations
1. The PAYG business model is simple
2. PAYG companies are complex businesses
3. The business model is changing quickly
4. Risk and return opportunity is not equally spread across the value chain

Invest Equity
5. Consider the 2nd wave of PAYG companies in new markets
6. Re-consider valuations of the leading PAYG companies

Invest Debt
7. PAYG companies capital structure and debt financing needs
8. PAYG companies’ consumer loans can develop into an attractive asset class
9. For (credit) risk analysis: Less innovation, more time-tested methods and developed market expertise.
Key considerations for investing in PAYG companies

1. The PAYG business model is simple
A simple business model

- PAYG companies sell a durable good at a gross margin of 50-80% after financing.
  - The product is in high demand
  - The market is huge
  - They use financing to make it affordable
  - They use technology to make the financing efficient

See also: “How a new breed of Distributed Energy Services companies can reach 500mm energy poor customers within a Decade – A commercial solution to the energy access challenge”, PEC analysis, 2014.
Key considerations for investing in PAYG companies

2. PAYG companies are complex
Eier-legende Woll-milch-sau

- Durable goods retailer
- Product design company
- Consumer brand company
- Financial service company
- Software and Big data company
- Distribution, sales and service operation
3. The business model is changing quickly
Sorry
# A vision for the future

<table>
<thead>
<tr>
<th>TODAY: Energy focus</th>
<th>FUTURE: Digital Businesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limited product range</td>
<td>Wide range of products and services</td>
</tr>
<tr>
<td>Vertically integrated</td>
<td>Disintegrated, specialized, using and offering 3rd party products and services</td>
</tr>
<tr>
<td>Proprietary backend</td>
<td>Modular, digital business platform built for interconnectivity to 3rd party applications, services and other organizations.</td>
</tr>
</tbody>
</table>

A vision for the future

Modern emerging market services companies will provide their customers with a range of products and a range of services from various manufacturers and service providers.

Their business processes will be supported by mainly off-the-shelf applications feeding data into- and using data from- a central database.

Those applications will be designed to easily interconnect with each other and other companies systems through an open API Strategy.
Key considerations for investing in PAYG companies

4. Risk and return is not equally spread along the value chain
Value pyramid in the PAYG sector

B2B

Products (Hardware)

Systems (Software) and know-how

Consumer finance; Sales and service; Data and marketing

B2C

Increased competition

Less return and in the medium term less risk

Increased Margin

More opportunity in the short to medium term
What to look for

- **The team**
- Customer service focus & sales/service operation
- Database and systems set-up
- Scalable funding structure: equity and working capital (inventory- and consumer-finance)
- Financing charge versus financing costs
- Customer service cost
- Gross margin on financed product sales
- Product
5. Consider the 2nd wave of PAYG companies in new markets
The 2\textsuperscript{nd} wave of PAYG companies has just begun to rise in more than 10 countries with sizeable off-grid populations and favorable conditions for a PAYG company. This offers a vast opportunity for smart, early stage equity (and entrepreneurs).

> 95% of PAYG customers live in 6 countries and are served by 8 companies

Customer data approximated by the author for illustration purposes; maybe out dated in some cases.
Key considerations for investing in PAYG companies

6. Reconsider equity valuations of the leading firms in the sector.
Equity valuations may not be too high

- Each customer generates [$150] in revenue and the business has a sustainable EBT margin of [30%] ➞ each customer generates up to $45 in pre-tax annual profit.
- 100,000 customers ➞ potential $4.5m EBT.
- 10x multiple ➞ $45m equity value.

But, how much more external equity is needed to grow to 1m customers and $450m in equity value?
Key considerations for investing in PAYG companies

7. PAYG companies’ capital structure and debt financing needs.
PAYG companies capital structure

- 10x more potential for consumer finance than need for inventory finance
- Note: Currency exposure of consumer loan portfolio

PAYG company at 200,000 paying households

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIPU</td>
<td>150.00 USD</td>
</tr>
<tr>
<td>ARPU</td>
<td>8.33 USD</td>
</tr>
<tr>
<td># Growth per year</td>
<td>100,000</td>
</tr>
<tr>
<td>Inventory turnover</td>
<td>4 mths</td>
</tr>
<tr>
<td>Inventory finance need</td>
<td>3,750,000 USD</td>
</tr>
<tr>
<td># Scale</td>
<td>200,000</td>
</tr>
<tr>
<td>Remaining average life</td>
<td>24 mths</td>
</tr>
<tr>
<td>Consumer finance potential</td>
<td>40,000,000</td>
</tr>
</tbody>
</table>

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1 “A discussion about working capital financing for DESCOs (PAYG companies), PEC analysis, 2015.”
3bn+ consumer loans per year by 2021

Key assumptions:
100% YoY growth, [ARPU 8.33 and remaining average life of 24 mths =] Average loan size $200.
8. PAYG companies’ consumer loans can be an attractive asset class.
Attractive features

- Scale – more than 2bn per year by 2021.
- Diversification – high number of small loans.
- De-correlation – borrowers in frontier markets with less exposure to global economy.
- Local currency denomination – attractive assets for local institutional investors; extra return for qualified international investors.
- Impact – socio-economic benefits for endusers, climate neutral economic development.
A path to scale

✓ A sustainable, scalable and transparent corporate financial structure.
  ▪ Aligned inventory finance and consumer finance

✓ Strong systems and processes
  ▪ For transparent data analysis, customer-, systems- and cash flow control.

✓ A debt product that provides structural protection and transparent risk profiles.
  ▪ Securitization and similar structures\(^1\).

\(^1\) “How can PAYG solar companies be financed”, BNEF analysis, 2016.
Key considerations for investing in PAYG companies

9. For (credit) risk analysis: Less innovation, more time-tested methods and developed market expertise.
Risks

• Consumer credit risk
  ▪ Not so new

• Currency risk
  ▪ Companies better not take it; investors only if they can survive it.¹

• Operator risk
  ▪ Complex; consider points 1-5 to start

Credit risk – nothing new

A PAYG companies loan portfolio is nothing else but a portfolio of expected cash flows.

• The analytical tools to analyze a portfolio of expected cash flows exist.

• It is more important to develop a coherent and transparent approach towards estimating the key inputs into the credit analysis: (1) the expected cash flow schedule, (2) the risk of default and (3) the related loss given default.
  • It is less important to develop a standard approach.
  • Complex models and historical data analysis can be dangerous, if the limitations of such models are not clearly understood.
Further reading

Persistant Energy Research: www.persistentnrg.com/analysis

- **May 2014**
  - Presentation of the DESC0 business model

- **Mar 2015**
  - On working capital financing for DESC0s

- **Sept 2015**
  - On equity financing for DESC0s

- **Oct 2015**
  - FX Risk and Mitigation Strategies

- **Apr 2016**
  - Energy access and financial inclusion nexus
Questions, comments, feedback? Please contact us at info@gogla.org.

For more resources, please visit www.gogla.org/resources.