

# POWER LEDGER Chapter

## 3 ~4

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3 POWER LEDGER'S ACHIEVEMENTS

4. TECHNICAL OVERVIEW

## 3.1 INTRODUCTION

Power Ledger 於2016年5月正式成立，旨在解決全球的能源系統三大挑戰：

1. Finding a way to include **individuals** in high-density housing in the booming distributed energy economy;
2. Re-inventing electricity networks to provide an incentive(激勵) for the connection of DER (Distributed Energy Resources) ;
3. Mitigating the risk of stranding multiple billions of dollars in valuable network assets. (減輕擱置 數十億美元網路資產的風險 ?)

# 3.1 INTRODUCTION

2016 在澳洲 & 紐西蘭試 run P2P區塊鏈的能源交易平台

Power Ledger 使用法定貨幣交易 & 個人 P2P 之間交易

Power Ledger開發並部署了商業能源管理系統，也適用多單元公寓的租戶之間的交易

與房地產開發商合作，通過使用能源交易平台來支持 DER 在社區中的高滲透率

幾十年來在能源行業的工作和磨練，consumer-driven transactive technologies，通過激勵促成消費者，個人用戶(未來的消費者 Prosumer) 和行業之間的合作

Power Ledger的合作夥伴數量迅速增加，歡迎願意將交易架設在這平台上

# 4. TECHNICAL OVERVIEW

## 4.1 INTRODUCTION

使用 Dual Token (POWR and Sparkz)

這平台是透過預先購買的 token , 讓多樣化的市場管理/定價機制 和 電力 ( 度 ) 可以互通

POWR tokens are the frictionless blockchain tokens that allow Application Hosts and Participants access to and use of the Platform (like a limited software licensing permission).

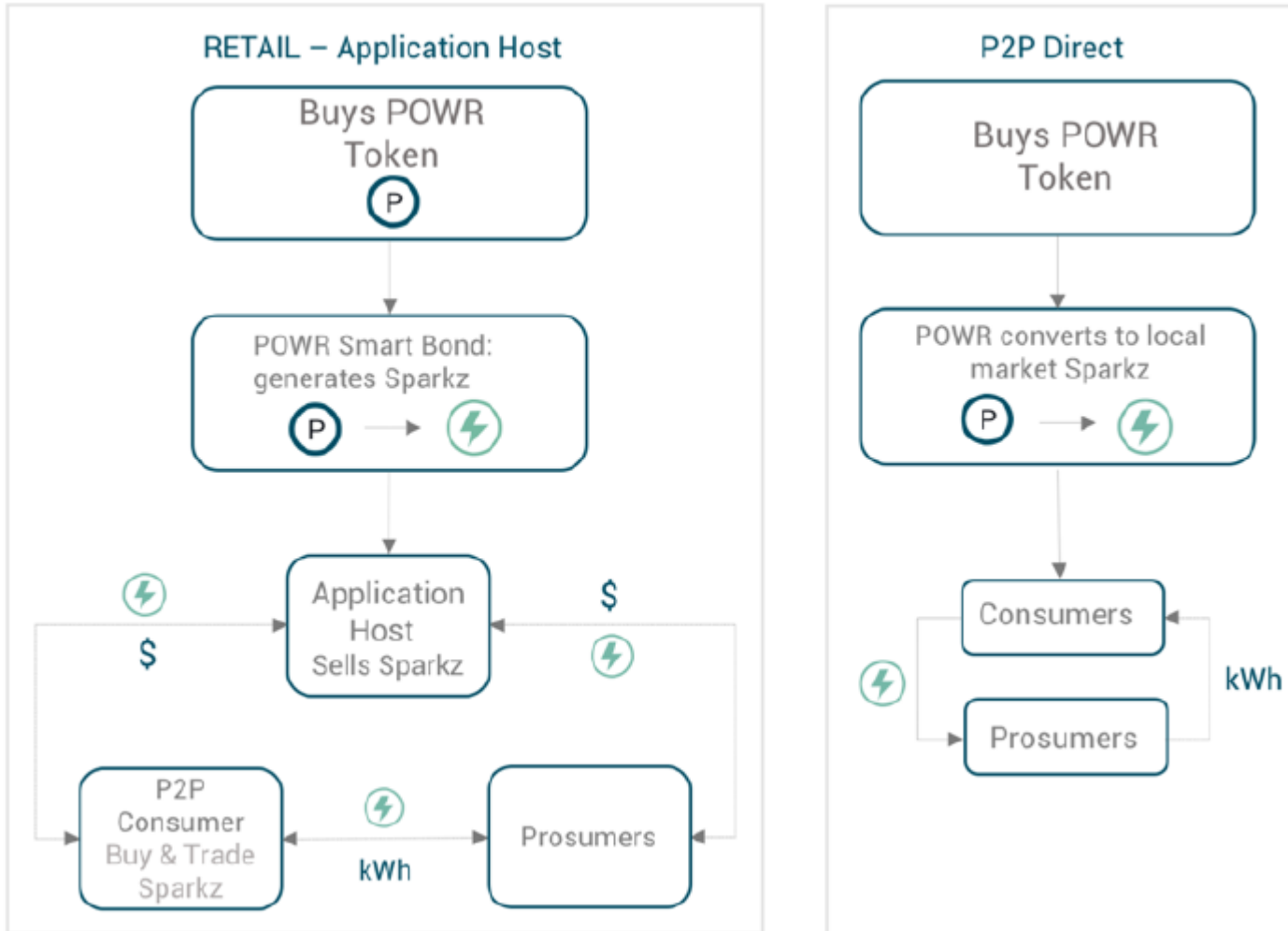
Sparkz tokens are issued against escrowed POWR tokens, via a Smart Bond, and used by the Application Host to onboard its customers

The POWR to Sparkz ratio for third party developers may be adjusted depending on their customer feedback and reputation.

Sparkz, the “low level” token, are specifically limited to representing the tokenized value of a unit of electricity in varying markets around the world. (Sparkz 是代表在世界各地的不同市場中的電力單位的價值 ??)

Sparkz maintain a steady exchange rate between local market electricity prices and the exchange priced POWR token.

# 4.1 INTRODUCTION



**Application Hosts**(utilities, retailers, property managers, etc.) are entities and businesses that run an Application on the Platform.

For example, a utility company using the Platform will be an Application Host, as is an EV-charging services business.

A Decentralized Autonomous Organization can also become an Application Host.

Consumer and Prosumers buy and sell energy, which is settled with Sparkz tokens and may redeem the Sparkz for cash via their Application Host

## 4.2 POWR TOKEN

The POWR token will serve as the fuel of the Power Ledger Ecosystem.

POWR tokens help to facilitate(促進) low cost and better returns on electricity. They interact with the Ecosystem through:

- Providing governance and consumer protection through Smart Bond technology (section 4.4)
- Facilitating access to use the Platform (section 4.4)
- Providing loyalty rewards to Participants (see section 4.6);
- Contributing and connecting with renewable energy charities and organizations (see section 4.6);
- Providing access priority to Asset Germination Events and benefits from an asset's 'POWR' generation (see section 5.5.7);

## 4.3 DUAL TOKEN ECOSYSTEM

需要 POWR token 才能生成 Sparkz, Sparkz用本地貨幣定價，發行和贖回，例如 在澳大利亞 1 Sparkz = 1澳分AUD。

## 4.4 POWR TOKENS ARE ACCESS PERMISSION TOKENS

Application Host 需要購買足夠的 POWR 來生成必要的 Sparkz以進行交易  
參與者可以直接與每個市場進行交易，參與者將能夠轉換他們的 POWR token 成 Sparkz

POWR 是許可證，賦予 Application Host 在平台上進行交易的能力  
POWR 不僅會提供使用網路，還有智能綁定功能。  
POWR tokens from the [growth pool](#) 用來獎勵 Application Hosts

Application Hosts such as Energy Retailers(能源零售商) and Network Utilities(公共事業網路) will be required to provide the POWR tokens as surety(保證) for the Sparkz they receive from the Platform.

The Sparkz are then used to transact electricity between their Customers in their home market.



## 4.5 POWR FUNCTIONS AND SMART BONDS

POWR tokens will be escrowed for Sparkz in an Ethereum Smart Bond, and can only be unlocked from the Smart Bond upon the return of the Sparkz. (POWR代幣將在Ethereum Smart Bond中為Sparkz託管，並且可以只有在Sparkz歸還後才能從智能債券解鎖。)

智能債券合約能保護消費者，消費者能夠直接贖回他們的 Sparkz，轉到另一個 Application Hosts。

## 4.6 POWR TOKENS ARE INCENTIVE TOKENS: A VIRTUOUS CYCLE (良性循環)

All Prosumers generating and Consumers purchasing renewable energy are rewarded POWR tokens, under the Green Energy Loyalty Rewards program, for using the Platform. The incentive formula is weighted towards renewable energy producers. The Loyalty Incentive Program is funded by charging a small fee for all P2P transactions on the Platform. Part of the fee is then used to purchase POWR tokens on exchanges and distribute them under the program, incentivizing renewable energy generation.

(依據綠色能源忠誠獎勵計劃(Green Energy Loyalty Rewards) , 所有生產和購買可再生能源者, 可以得到 POWR代幣, 獎勵的公式是依再生能源的權重來計算。忠誠獎勵計劃的資金來源是平台上 P2P 交易的費用。部分fee用來購買POWR代幣, 分發給再生能源業者, 激勵再生能源業者。)

顧客可以捐贈部分 Tx 給慈善機構 或 創新型可再生能源有貢獻的組織

## 4.7 POWR AND EXCHANGES

以太坊 ERC20 POWR tokens 也可以在公共場合使用交流。  
交易所是獨立的，不受Power Ledger操作。  
交易所有助於進一步讓 POWR tokens 分散和增加透明度，讓 POWR 的持有者選擇退出或進入平台。

如果消費者或消費者移動到另一個國家，他們沒有必要關閉他們的賬戶並退出系統。  
Power Ledger生態系統將成為一個全球平台用戶可以在 Application Hosts 之間遷移，並立即與其POWR進行交易

其核心重點是提供更低的成本能源和更高的能源回報為公民投資者，同時提供有力的激勵措施，以優先考慮採用可再生清潔能源。