

**camco**

## Utilization of Low-Pressure Associated Gas

低压联合天然气的利用

Usinsk, Russia

**Dmitry Voevodkin**

**JI Specialist, Russia**

俄罗斯 JI专家

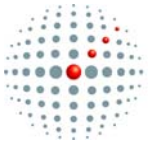
31<sup>st</sup> October 2007

Methane to Markets Partnership Expo

China World Hotel, Beijing

2007国际甲烷市场化大会及暨展览会

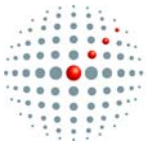




# Agenda

---

- Enisei – current situation  
叶尼塞公司现状
- Description of the project  
项目概述
- Why isn't the project “business-as-usual”?  
为何不是“正常商业性”项目？
- How carbon financing helps to overcome the barriers  
怎样碳融资有助于克服其障碍性
- About Camco
- 关于Camco 公司



# Enisei Ltd

Enisei Ltd was founded in 2000 in the town of Usinsk, Komi Republic, Russia  
叶尼赛有限公司创建于2000年的俄罗斯Komi共和国Usinsk镇。

The company's core business is oil production at the oil field located 60 km  
North of Usinsk.

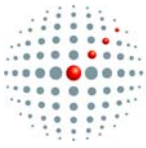
公司主营石油产品，位于Usinsk北部60公里的油田区。



Location 位置

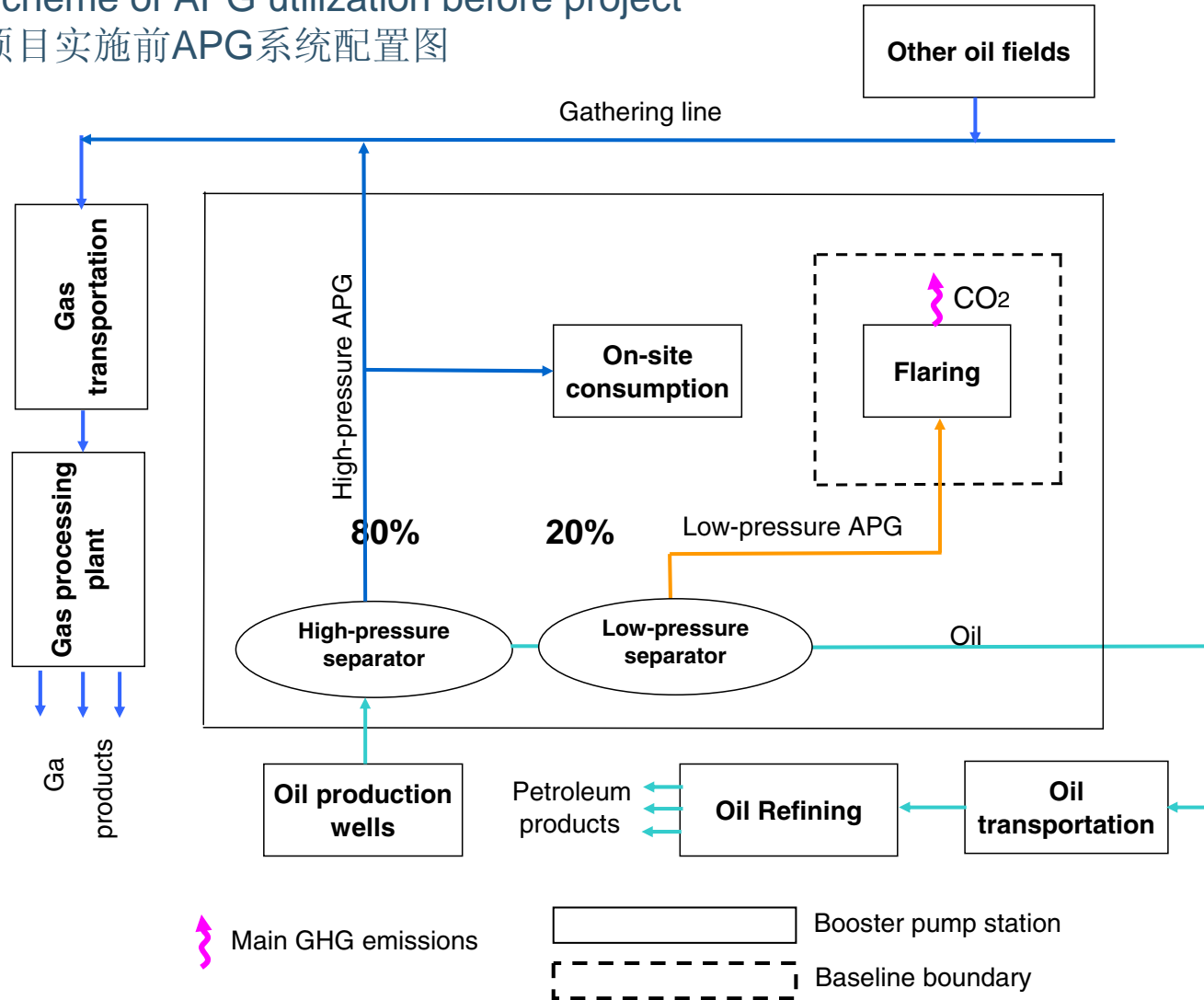


Booster pump station 升压泵站

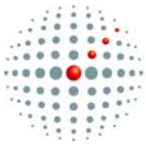


# Enisei – current situation 叶尼赛现状

Scheme of APG utilization before project  
项目实施前APG系统配置图







## Description of the project 项目概述

---

- **Title:** Utilization of low-pressure associated petroleum gas at Enisei, Ltd.  
**名称:** 叶尼赛有限公司低压联合石油天然气利用。
- **Purpose:** The project is aimed at utilization of low-pressure associated petroleum gas (APG) and the discontinuation of its flaring.  
**目的:** 此项目是为了低压联合石油天然气利用及终止燃烧。
- **Concept:** The project is based on the construction of vapor recovery unit (VRU). Low-pressure APG will be fed to VRU after the end oil separator. The unit will produce dry gas and gas condensate that will replace not less carbon-containing fuels on the market.  
**概念:** 此项目是基于气体回收装置进而实施的。是把油分离器尾端的低压联合石油天然气送到气体回收装置，此装置产生干燥的天然气和气体凝结物，从而代替市场上多碳燃料。



## Description of the project 项目概述

---

- Expected results of the project:

项目预期:

- reduction of AGP flaring up to 13.5 million m<sup>3</sup> per year;  
AGP火炬燃烧量每年减少到1350万立方米
- output of useful products: up to 13 million m<sup>3</sup> of dry gas per year and about 1 000 tonnes of gas condensate per year;  
可用产品生产量: 每年干燥天然气1300万立方米, 天然气凝结物1000吨
- improvement of ecological situation in the field area.  
改善油田区域生态环境

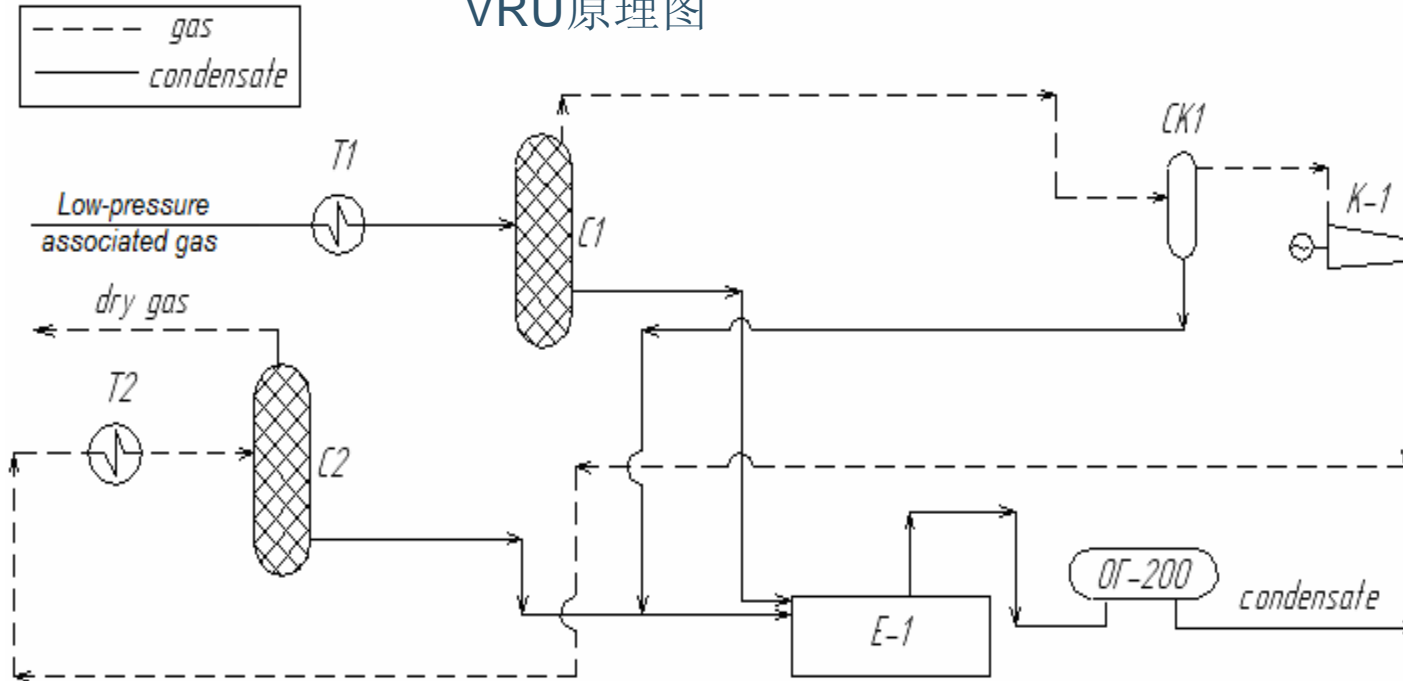
- Expected time of putting into operation: year-end 2007

预期投产时间: 2007年底



# Vapor Recovery Unit (VRU) 气体回收装置

Principal scheme of VRU  
VRU原理图



Compressor unit  
空压机







## Environmental Impact 环境评价

Expected CO2 emission reductions: 预期的CO2减排量

Year 年份	Estimated emission reductions in tonnes of CO2 equivalent 估算的CO2减排量 (吨)
2008	66 436
2009	61 215
2010	56 421
2011	49 814
2012	46 193
<b>Total 合计</b>	<b>280 078</b>
<i>Average</i> 平均值	<i>56 016</i>



## Why isn't the project “business-as-usual”? 为何不是“正常商业性项目”

- Common practice:

### 现状

- Full utilization of APG is not a widely spread practice in Russia. APG average utilization factor is only 60% at most enterprises of Komi Republic. Up to 20% of APG previously flared will be additionally utilized under the project that will increase APG utilization level to 99%.

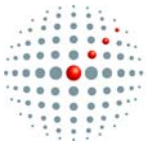
在俄罗斯，联合石油天然气的整体利用没有广泛的展开，APG平均利用率在Komi（科米）共和国的大多数企业仅60%。将有近20%以前火炬点燃的天然气在此项目影响下加以利用致使APG利用水平达到99%。

- In general, complete utilization of high-pressure APG takes place only if there is a developed APG processing infrastructure. Such infrastructure is not available to all Russian oil producing companies.

一般而言，高压APG的整体利用仅在APG地下开发过程中进行，俄罗斯石油公司不采用这种地下开发方式。

- Even if there is APG processing infrastructure, in most cases low-pressure gas is still flared.

即使有APG处理基础，在大多数情况下仍采用低压天然气火炬点燃。



## Why isn't the project “business-as-usual”? 为何不是“正常商业性项目”

- Economic barriers:

经济障碍性

- Low procurement prices for APG regulated by the government;  
政府规定获取APG的价格较低;
- Low quantity of gas condensate that results in difficulty to find a buyer;  
天然气凝结物数量少难于找到买家;
- Low taxes for flaring (several times lower compared to other oil-producing countries);  
燃烧税种低;
- It is more profitable to invest into development of oil producing facilities than into development of supplementary products.  
投资石油生产设备比投资石油附属产品有利可图。

- Technical barriers:

技术障碍性

- Lack of oil company's own production facilities for utilization of APG at oil production sites  
石油公司缺乏自己生产的设备用于APG石油生产现场



## Relevance of Carbon Finance 碳融资

The main economic indexes of the baseline and project activities:  
主要经济指标：

Data name 名称	Unit 单位 (欧元)	Project activity as not JI 非JI (联合履行) 项目业务	Project activity as JI JI项目业务
Investments 投资	EUR	685 835	685 835
NPV 净现值	EUR	- 52 964	812 591
IRR 内部收益率	%	17.5	65.0

Participation in JI increases profitability of the project more than **three times**, reaching reward profile.

参与JI（联合履行），项目收益率增加3倍多可达盈利。



## About Camco 关于Camco

The world is acting to meet a challenge on a global scale: we have to create a sustainable, low carbon economy, and manage the likely consequences of human induced climate change.

当今世界正面临全球范围内的挑战：我们必须创建一个可持续发展的、低碳排放的经济社会，控制由于人类活动可能导致气候变化的后果。

The Camco Group is a pioneering business with an outstanding track record creating value in the sustainable energy and low carbon markets. The Group works closely with major companies worldwide, establishing partnerships to turn our clients' climate change liabilities into economic, social and environmental assets.

Camco 集团是可持续能源及低碳市场方面杰出贡献的倡导者，它与世界的主要大企业保持着紧密的联系，控制客户方气候变化使其在经济、社会、环境发展和改善。



## About Camco 关于Camco

Camco is a leading carbon asset developer with one of the world's largest carbon credit portfolios. We generate carbon credits by partnering with companies to identify, develop and manage projects that reduce greenhouse gas emissions. Camco then arranges the sale and delivery of carbon credits to international compliance buyers and into the voluntary market.

The company's portfolio consists of approximately one hundred projects all over the world including projects in China, South Africa, Russia and other countries.

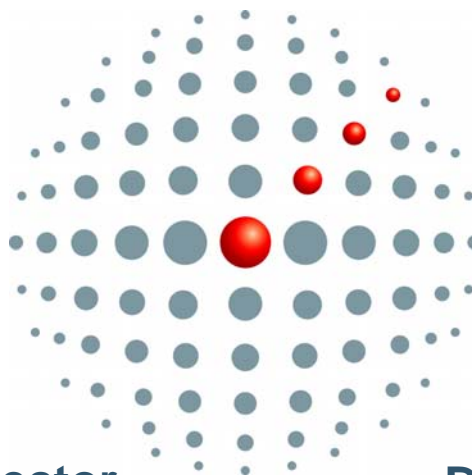
Camco公司是世界领先的碳资产开发商并具有世界最大的碳资产投资组合之一，我们开发的碳资产通过识别、开发进而管理项目以便降低温室气体的减排，然后Camco安排并交付碳资产给买家到国际买方市场。公司的投资组合包括约100个项目遍布世界包括中国、南非、俄罗斯及其它国家。



Thank you for your attention!

感谢您的支持

[www.camcoglobal.com](http://www.camcoglobal.com)



**Camco Russia:**

**Arthur Houston – Managing Director**

Moscow head office

t: +7 495 721 2565

f: +7 495 7212566

[arthur.houston@camcoglobal.com](mailto:arthur.houston@camcoglobal.com)

**Dmitry Voevodkin – JI Specialist**

Archangelsk branch office

t: +7 818 221 7490

f: +7 818 221 7490

[dmitry.voevodkin@camcoglobal.com](mailto:dmitry.voevodkin@camcoglobal.com)