



项目编号：2007—094—XNY

江苏省宿迁区域 生物质直燃发电项目生物质资源 可供性调研报告

中节蓝天投资咨询管理有限责任公司

二零零七年九月

1.2 调研方法与调查样本

本次生物质资源可供性现场调研从2007年9月3日开始,至9月12日结束。综合调研小组实际调查、测算数据和宿迁当地提供的资料,宿迁区域生物质资源可供性调查如下。

1. 宿迁区域秸秆资源量

1) 宿迁区域粮食种植面积及粮食产量

表 1 宿迁区域主要粮食种植面积及产量一览表

| 调查项目 | 宿豫区 | | | 宿城区 | | |
|-----------|---------|---------|---------|---------|---------|---------|
| | 小麦 | 水稻 | 总量 | 小麦 | 水稻 | 总量 |
| 种植面积(千公顷) | 27.17 | 30.88 | 58.05 | 22.7 | 17.43 | 40.13 |
| 粮食产量(万吨) | 15.2076 | 24.4115 | 39.6191 | 12.4378 | 13.8569 | 26.2947 |

注:由于秸秆资源丰富,针对秸秆资源的调查仅针对距离项目地最近的宿豫区和宿城区

2) 宿迁区域小麦、水稻秸秆资源总量

综合调研小组实际调查、测算数据和宿迁当地提供的资料,宿迁区域(宿豫和宿城两区)秸秆资源总量测算值见下表。

表 2 宿迁区域稻秆、麦秆资源总量表 (单位:万吨)

| 品种 | 宿豫区 | 宿城区 | 两区合计 |
|----|------|------|------|
| 麦秆 | 10.2 | 6.5 | 16.7 |
| 稻秆 | 17.3 | 10.8 | 28.1 |
| 合计 | 27.5 | 17.3 | 44.8 |

3) 收购过程中减量比率的确定

表 3 秸秆的损耗、用途、去向分布与减量比率 (%)

| 类型 | | 雨季损耗 | 收割损耗 | 家庭自用 | 工业用料 | 焚烧/堆放 | 合计 |
|----|------|------|------|------|------|-------|-------|
| 麦秆 | 当前分布 | 6.0 | 8.0 | 10.8 | 5.5 | 5.0 | 35.3% |
| 稻秆 | 当前分布 | 4.0 | 4.0 | 24.9 | 1.2 | 5.0 | 39.1% |

4) 宿迁区域秸秆资源的可获得量

根据上述调研结果和预测，秸秆资源的减量比率分别为：小麦秸秆为 35.3%，水稻秸秆为 39.1%。按照资源可获得量=资源总量×(1-减量比率)的计算方式，宿迁区域稻麦秸秆的可获得量约为 28 万吨，见下表：

表 4 宿迁区域秸秆产量及可获得量 (万吨)

| 秸秆资源总量 | | | 秸秆资源可获得量 | | |
|--------|------|------|----------|------|------|
| 麦秆 | 稻秆 | 总量 | 麦秆 | 稻秆 | 总量 |
| 16.7 | 28.1 | 44.8 | 10.8 | 17.1 | 27.9 |

2 宿迁地区粮食和经济作物壳类资源可获得量

根据宿迁市统计局提供数据显示：宿迁市稻谷种植面积为 202.23 千公顷，年稻谷总产量 149.25 万吨。宿迁市区域共计粮食加工企业 159 家，平均出壳率为 20%。即：149.25*20%=29.85 万吨。考虑 50 公里区域收购半径，工业用料 23%、家用料 19%等和收割等损失 8%等因素，其可获得量应为 50%左右，即 14.8 万吨。



Project No. 2007—094—XNY

Report of Resource Investigation in Suqian Area

Blue-Sky Investment Consulting & Management Co., Ltd.

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Sample of this investigation

This investigation was implemented from Sep 3rd 2007 to Sep 12th 2007.

The research team investigated and calculated the supplement of biomass resource in Suqian Area by on-site visiting, sampling and the relevant documents from local government.

1. The quantity of straw resource in Suqian area

1) The plant area and production of Rice and Wheat in Suqian area

Table1 Production of Rice and Wheat in Suyu and Sucheng District

| Term | Suyu District | | | Sucheng District | | |
|------------------------|---------------|---------|---------|------------------|---------|---------|
| | Wheat | Rice | Total | Wheat | Rice | Total |
| Plant Area (k hectare) | 27.17 | 30.88 | 58.05 | 22.7 | 17.43 | 40.13 |
| Production (k tonne) | 152.076 | 244.115 | 396.191 | 124.378 | 138.569 | 262.947 |

Note: The straw resource is abundant in Suqian Area, so the investigation on straw resource is implemented only in Suyu District and Sucheng District which are the nearest districts around the project site.

2) The quantity of straw in Suqian area

Based on the result of on-site visiting, sampling and the relevant documents from local government, the generation of biomass resource from Suqian Area (for straw, only Suyu district and Sucheng district) is compiled and calculated by investigating team. It is shown in table 2.

Table 2 the generation of rice straw and wheat straw in Suqian area (10⁴t)

| | Suyu District | Sucheng District | Total |
|-------------|---------------|------------------|-------|
| Wheat straw | 10.2 | 6.5 | 16.7 |
| Rice straw | 17.3 | 10.8 | 28.1 |
| Total | 27.5 | 17.3 | 44.8 |

3) The usage and loss ratio of straw during the purchase process

Table 3 the usage and loss ratio (%)

| Type | | rainy season lost | harvesting lost | family utilization | industrial materials | dumping/uncontrolled burning | Total |
|-------------|----------------------|-------------------|-----------------|--------------------|----------------------|------------------------------|-------|
| Wheat straw | Current distribution | 6.0 | 8.0 | 10.8 | 5.5 | 5.0 | 35.3% |
| Rice straw | Current distribution | 4.0 | 4.0 | 24.9 | 1.2 | 5.0 | 39.1% |

4) Available straw resource in Suqian area

From the Table3 above, the usage and loss ratio of wheat straw is 35.3% and that of rice straw is 39.1%. According to the formula: available biomass resource = gross generation *(1-usage and loss ratio), the available biomass resource quantity in Suqian area is about 28×10^4 t.

Table 4 Straw production and available quantity in Siqian area (10^4 t)

| Gross straw generation | | | Available quantity | | |
|------------------------|------|-------|--------------------|------|-------|
| Wheat | Rice | Total | Wheat | Rice | Total |
| 16.7 | 28.1 | 44.8 | 10.8 | 17.1 | 27.9 |

2. Quantity of rice hull resource in Suqian City

According to the statistics established by Suqian statistic bureau, the plant area of rice is 202.23 k hectare and gross generation is 149.25×10^4 t. There are 159 rice processing entities in Suqian City, with an average hull production ratio of 20%. Therefore, the gross rice hull generation is $149.25 \times 20\% = 29.85 \times 10^4$ t. Considering a purchase radius of 50 km, industrial material 23%, family utilization 19% and harvesting loss of 8%, the gross rice hull production is available, which is 14.8×10^4 t.