PRE-FEASIBILITY STUDY REPORT FOR 10MW SOLAR POWER GENERATION PROJECT

Konsa City, Kajiado

10MW Solar Power Plant

Client (Developer): Kenya Light Project Ltd.

Development Consultant (Pre-build Stage): Ecoplan Kenya Ltd.

To accompany FIT application EOI

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ABSTRACT

A prefeasibility study of a solar power plant project was carried out by us Eco Plan Kenya Ltd, the appointed Consultancy Company of Kenyalight-Project Ltd in May 2015 in order to study and search the best location to install a concentrated solar power plant in Konsa City. The investors were determined to obtain a site with a maximum possible irradiation.

Kenya's Vision 2030 is the national development blueprint, initiated to transform the country into a newly industrializing, middle-income economy by the year 2030. The Vision is founded on three pillars of economic, social and political development. The economic pillar is aimed at improving the living standards for all Kenyans through an economic development program, through which the country is expected to achieve an average Gross Domestic Product (GDP) growth rate of 10% by the year 2030 [Government of Kenya (GoK), 2007].
The level of economic development determines the intensity of energy use; as economic systems in developing countries expand, so is the demand for energy to power production activities (Winkler, 2005; UN-Energy/Africa, 2011). The Kenya Vision 2030 identifies energy as one of the key infrastructural enablers, necessary for the realization of its objectives (GoK, 2007; 2012a). In view of this, the economic development program mooted in the Vision is expected to increase demand on Kenya's energy supply.

Currently, energy .shortages and supply disruptions coupled with high cost remain serious obstacles to the manufacturing sector (GoK, 2012a). In liberalized markets, the cost of energy significantly influences the competitiveness of local products vis-à-vis imported goods. Consequently, a high cost of energy negatively affects domestic wealth creation, balance of payments and employment creation, as consumers opt for cheaper imports (GoK, 2012a; Karekezi and Kimani, 2009). This scenario necessitates the establishment of new projects to step-up energy supply at a lower cost and increase efficiency in energy consumption (GoK, 2012a). Universal access to sustainable, affordable and clean energy is instrumental for the realization of Kenya's Vision 2030 (GoK, 2012a).

The main objective of this project is to generate power and to feed it into the National Grid and in return earn revenue through PPA agreement with the electricity distributer which is in this case the Kenya Power and Lighting Company Ltd.

Normally, eleven years of solar irradiation data from an on-ground weather station is needed for site assessment, such data was derived from the Nairobi based meteorological station which is about 16km S.East of Konsa City In this case, the technical team also used satellite imagery in order to have the accurate value for the right evaluation of the site. Some better satellite imagery generated solar maps are attached to this report as indexes.

1. INTRODUCTION

This project is known as the Proposed Konsa City Solar Power Generation Plant. It is located adjacent to Konsa City
Shopping Centre, approximately 300m off the Old Naivasha Road. Its
geographical coordinates are within the range of 0° 58'16.55"S 36 ° 35'15.91"E

The project is intended to produce approximately 10MW of power.

Kenya's current effective installed (grid connected) electricity capacity is approximately 2,294[1] MW. Electricity supply is predominantly sourced from hydro and fossil fuel (thermal) sources.

Just until recently the country lacked significant domestic reserves of fossil fuel. The country has over the years had to import substantial amounts of crude oil and natural gas. This might change with the discovery of oil reserves in Kenya, which relied on oil imports to meet about 42 percent of its energy needs in 2010. Connectivity to the national grid in Kenya currently stands at 23% according to World Bank.

In Kenya, there are plans by the government to end the monopoly of the electricity distribution market but until that happens, power distribution is only held by one company:

- Kenya Power

However power generation is done by the Kenya Electricity Generating Company (KenGen) which is the major Company controlling about 90% of Installed Capacity. However, there are other smaller Independent Power Producers (IPPs) who produce about 10% of Installed Capacity):

(i) Westmont
(ii) Iberafrica
(iii)OrPower4 (Kenya) subsidiary of Ormat Technologies
(iv) Tsavo Power Company (TPC)
(v) Aggreko
(vi) Africa Geothermal International (AGIL)[6]

Few companies have embarked on a major solar power generating installations in Kenya which is fed to the national grid through PPA and FiT agreements and therefore the Kenya Light Project Ltd, hereby referred to as the applicant for the FIT will be the pioneer company to venture in to this kind of a worthy investment from Alpin Sun GmbH funders. Discussions have taken place with the University of Nairobi and they have offered valuable support to the KENYALIGHT-PROJECT LTD projects in Konsa City districts and together with Eco Plan Kenya Ltd who will produce the necessary Environmental Impact Assessment Reports (EIA's), Power Purchase Agreements (PPA's), Feed-in Tariff Agreements (FIT's – we are using $0.12 KWh) and Grid connection negotiation and applications.

2. DESCRIPTION OF PROJECT AREA

(a) Project location with coordinates and relevant site maps.

The project is located in Konsa Cityarea of Konsa City County. It is adjacent to the Konsa City shopping centre to the North and the kikuyu escarpment and forest to the East.

Its geographical coordinates are within the range of 0° 58'16.55"S 36 ° 35'15.91"E.

The land consists of four different but adjacent parcels of land which are owned by Kiragu Kubai on free hold titles. The four parcels of land which make up the total land area of 43 acres (40.46 Hectares or 404, 687m2) are as follows;

- L.R KIJABE/KIJABE/BLOCK1/3242 -67.77Acres (27.38 Ha)
- L.R KIJABE/KIJABE/BLOCK1/3245 -18.53Acres (7.49Ha)
- L.R KIJABE/KIJABE/BLOCK1/3246 -9.97Acres (4.03 Ha)
- L.R KIJABE/KIJABE/BLOCK1/3249 -5 Acres (2.02 Ha)

(*Site maps are attached separately as an accompaniment to this report).*

(b) Physical & Salient features of the project site

The project will be located on a 43 acres piece of land. This particular land is located at the base of the Rift Valley. Towards the East lie the Kikuyu Escarpment and the bushes on these hills.

There are small streams that flow within the locality. These rivers are called Nasaia, Matasia and Ewaso kendong rivers. The Nasaia river flows along the Northern boundary of this particular parcel of land. However, these are small seasonal rivers.

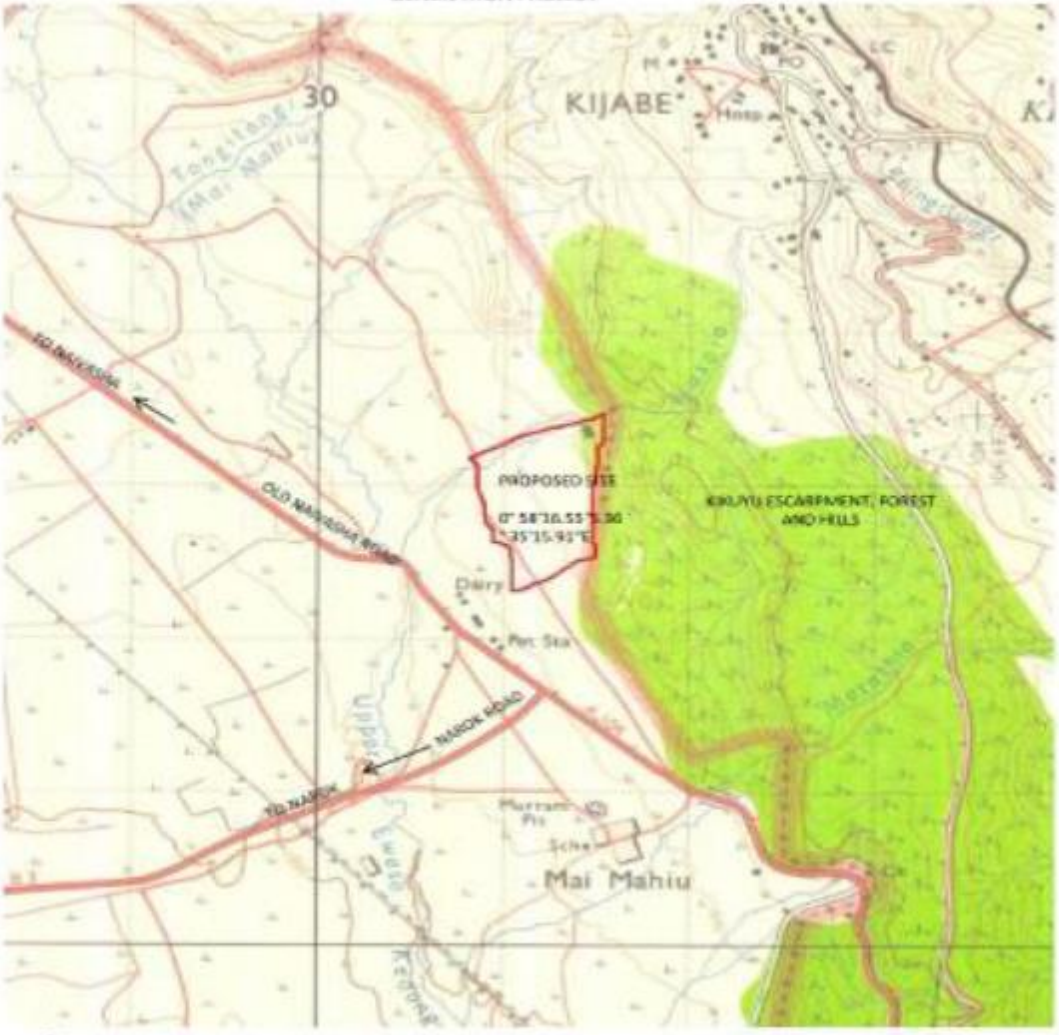
The vegetation cover

The vegetation existing on the land comprises of short thorny bushes which is a characteristic of a semi-arid climate. Some of the species of plants found in the area include Acacia, Cactus, Sodom Apple and short grass among other dry areas plants.

The Photo Plates below show the vegetation cover on the said land;

The Photo Plates below show the vegetation cover on the said land;

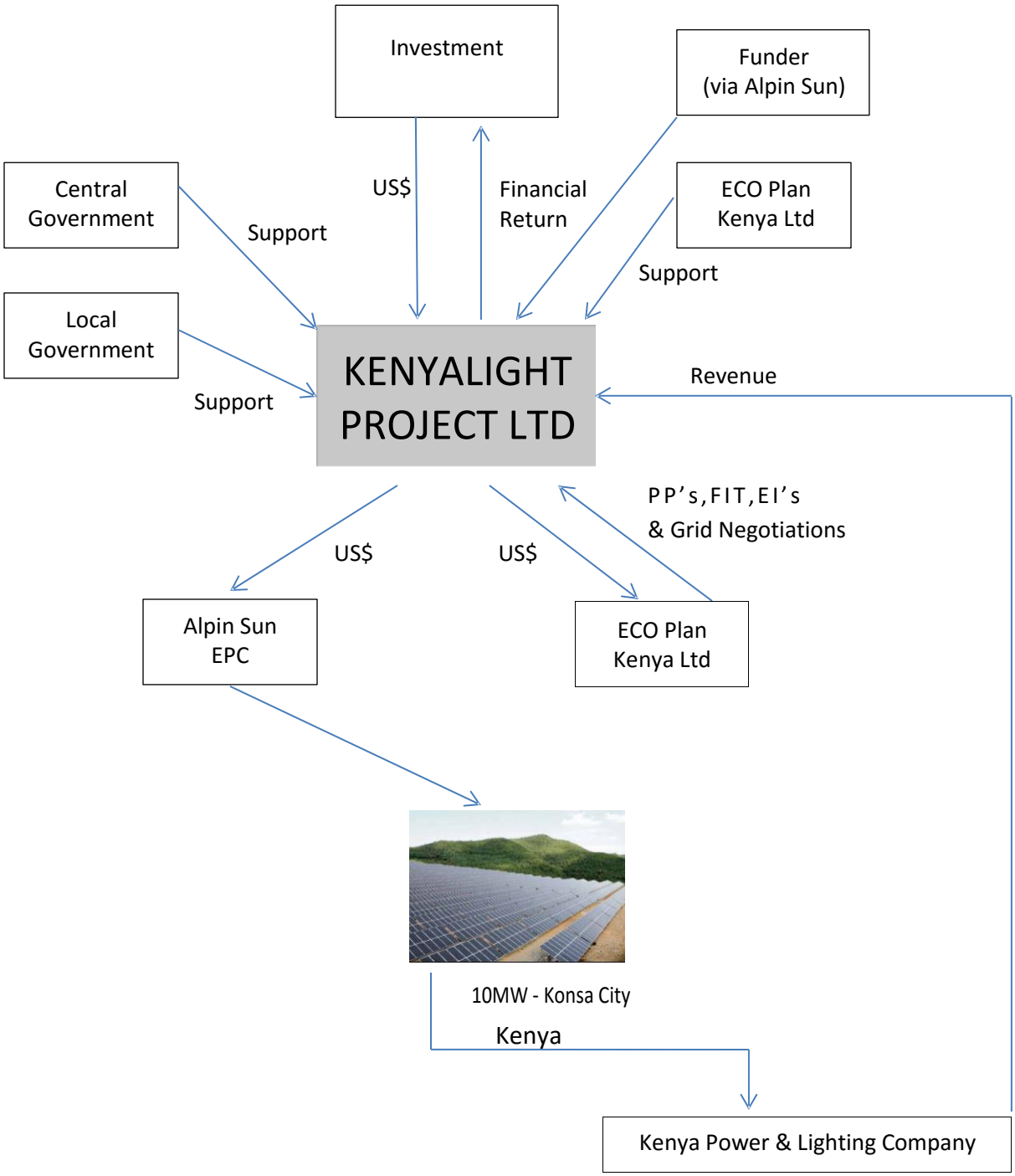
LOCATION PLAN FOR THE PROPOSED SITE FOR MAI MAHIU SOLAR POWER GENERATION PROJECT



SCALE: I:50,000

The yellow pin marker represents the large Sub station connection for the Solar Farm

3. Consortium of parties involved



KENYALIGHT-PROJECT LTD

We have already secured an authorisation letter obtained from the respective County Government together with specific support after discussions with the main Energy Minister in Kenya, we aim to develop the Konsa City 10MW Solar Farm for the KENYALIGHT-PROJECT LTD. Alpin Sun GmbH we have appointed as our EPC company to build the solar farms, they will be exempt of any import duty associated with technology required for all equipment including the PV panels.

Table 1: Summary of significance of the potential impacts associated with the proposed PV solar energy facility development

Construction / Decommissioning Impacts	Extent
Disturbance or loss of indigenous natural vegetation	L
Disturbance or loss of habitat for threatened / protected plants	L
Loss of protected trees	L
Impacts on watercourses and drainage areas	L
Establishment and spread of declared weeds and alien invader plants	L
Temporary disturbance to grazing land-use of the farm during construction	L
Soil loss/ erosion / degradation	L
Loss of heritage resources	L
Temporary visual intrusions / disturbances to people	L
Job creation and skills development of local people during construction (positive impact)	L-R
Economic spin-offs to local community.	L
Safety and security risks to site and surrounds	L
Temporary disruptions in the daily living and movement patterns to neighbouring	L
Operational Impacts	**Extent**
Loss of protected plant and animal species due to habitat transformation on the site.	L
Loss of low agricultural potential land on the site itself	L
Soil erosion	L
Visual impacts (intrusion, negative viewer perceptions and visibility of the facility)	R
Employment opportunities	L-R
Safety and security impacts on the site and neighbouring land.	L
Positive / negative effect on the tourism industry.	R
Contribution of clean energy.	N

L Local R Regional N National I International

An EPC company requirements –

Project Development

- Land owner and land rights (lease, purchase)
- Permits: EIA, grid connection, PPA and building permit, etc.

Site and connection data

- Coordinates: - 1° 11' 43.461" 36° 33' 59.832" and also the other site 0° 58'16.55"S 36 ° 35'15.91"E
- Exact size / dimensions
- Soil conditions / description, vegetation
- Drawings (including contour lines), preferably in .dwg format
- Pictures
- Grid connection point
    - Location
    - Specifications (voltage level, grid parameters, grid stability)

Commercials

- PPA terms and conditions
    - Status of negotiations / references
    - Duration
    - Compensation / unit
    - Currency
    - Escalators (e.g. inflation)
    - Counterpart / securities
- Other income streams
    - Green certificates, etc
- Taxes / charges on
    - Income
    - Power
- Doing business
    - Founding entities
    - Licenses for construction / operation
    - Local content requirements
    - Drawing money outside the country
    - Subsidies
- Other support measures
    - Potential financing or securing partners

Cooperation

- Your role and scope of services
- Your expectation of our role and responsibility
- Other parties involved
- Project development funding
- Cooperation agreement

Any and all other An EPC company requirements will be met

Kenya, a combination of huge solar resources, three times radiation levels compared to Europe, limited grid capacity and growing demand for power driven by one of the world's fastest growing economies provides all the right ingredients for an African solar explosion. In the same way that mobile phones have taken off in Africa, so solar, with its potential for off-grid and decentralised deployment, offer similar opportunities for propelling forward the continent's development of Solar Farms. The largest share of Kenya's electricity supply currently comes from hydroelectric stations at dams along the upper Tana River, as well as the Turkwel George Dam in the west. Shortfalls of electricity occur periodically, when drought reduces water flow. In 1997 and 2000, for example, drought prompted severe power rationing, with economically damaging 12-hour blackouts. Frequent outages, as well as high cost, remain serious obstacles to economic activity, hence the strong Government support for solar farms. Kenyan electricity needs are also currently supported by a petroleum-fired plant on the coast, geothermal facilities at Olkaria (near Nairobi), and shortfall covered in the form of expensive imports from Uganda.

There is a growing and urgent need for Solar Farms in Kenya, electricity demand is significantly rising mainly due to accelerated productive investment and increasing population. Historically, energy demand is positively correlated with economic and population growth rates, an opportunity that KENYALIGHT-PROJECT LTD are developing will take advantage of these growth rates. Currently the electricity demand in Kenya is 1,191MW against an effective installed capacity of 1,429MW under normal conditions. The peak load is projected to grow to around 2,500MW by 2015 and 15,000MW by 2030. To meet this demand, the projected installed capacity should increase gradually to 19,169MW by 2030 by utilising renewable energy technologies such as the KENYALIGHT-PROJECT LTD Solar Farms. Kenya has entrenched a very strong foundation on renewable energy investment stability within the new constitution. The state-owned Kenya Electricity Generating Company (KenGen), established in 1997 under the name of Kenya Power Company, handles the generation of electricity, while the Kenya Power and Lighting Company (KPLC) handles transmission and distribution.

The way forward - We have developed the "Resource Ownership" concept for Kenya the solar farm at Konsa City, where the Local Government and peoples in an area of the solar farm would receive 1% of revenue from the solar farm together with 1% revenue share also going to the landowner – this ensures Sustainable Energy development for Kenya. This initial request for the FIT is a request for one solar farm in Konsa City Kenya.

KENYALIGHT-PROJECT LTD have created, over a three year development period a Solar PV market opportunity in Kenya. The solar farm projects will form part of the 5,000MW capacity the Kenyan Government have targeted by 2018. KENYALIGHT-PROJECT LTD is well positioned to build the solar farm alongside our German partner of choice and EPC company Alpin Sun GmbH (Alpin), to provide very significant revenue streams and profit margins. Alpin are known by their peers as one of the best companies in the solar farm sector due to their technology choice, pricing and delivery values. KENYALIGHT-PROJECT LTD has had discussions with both the Energy Minister at Central Government. These discussions have assisted us in the Konsa City solar farm development and the timely and favourable Power Purchase Agreement (PPA) submissions are now being made.

KENYALIGHT-PROJECT LTD has also garnered major political support in principal from the Kenyan Government who have stated its aim is to oversee solar as a major contributor to the country's electrical generation requirements and specifically has aligned himself to the success of KENYALIGHT-PROJECT LTD's development programme. In addition to Central Government support, KENYALIGHT-PROJECT LTD has alliances at the County Governmental level and has already obtained a local letter of authorisation together with land assigned to the first project in Konsa City.

Just how is KENYALIGHT-PROJECT LTD going to achieve its development programme? Having established senior in-country links and the entry route, KENYALIGHT-PROJECT LTD is now positioned to attract investment to its project in Konsa City which is ready for roll-out. The identified location at Konsa City is optimal to generate the maximum capacity of electricity over a 21-year life cycle directly into the central electricity grid.– for this 10MW Solar Farm project in Konsa City we require $13 million for the build phase (Alpin Sun GmbH) costs, and all other costs including start-up costs bring total build stage costs to $14.817 million plus, which includes $1,817,000 pre build phase with investment in the form of either debt, equity of some form of negotiated hybrid to suit; refer to Financial section and also the separate financial xls. For further details.

The very significant revenues from a solar farm are generated due to the Feed-In-Tariff and in the case of the 10 MW project $35,443,818 million over twenty five years, the most obvious benefit of the feed-in tariff in Kenya is the potential for added capacity for renewables. According to the European Investment Bank Renewable Energy Performance Platform REPP the maximum capacity that the feed-in tariff will subsidize is 1,750MW added over the course of 20years. According to the United Nations Environment Program UNEP, it is reasonable to expect that the feed-in tariffs will stimulate 1,300MW of installed power capacity. The African continent arguably has the most to gain from the deployment of solar as an energy source as radiation levels are three times that of Europe and KENYALIGHT-PROJECT LTD is positioned to take advantage of this factor.

4. History

Senior staff now at KENYALIGHT-PROJECT LTD, namely Alan Brewer MSc was asked in 2012 by Joe Mwai to assist the Konsa City project and in 1995 he was asked to research and write one of the first UK City Energy Policies and Strategies to combat Climate Change. This work led onto his coordination of the Hampshire County Council Energy Network in 2002, progressing onto Sustainable Energy in the County Schools sector. The concept of Resource Ownership was born.

Following a period of time researching solar in the UK, developing PV in both domestic and business environments it became apparent that for true sustainability and commercial profitability, solar technology really needed greater radiation levels to optimize its benefits than that available in the climate across the UK and the majority of Europe. Africa was an ideal location and given Kenya's past history as a British Colony and political system similar to that of the UK, the country became the target of Alan's interest.

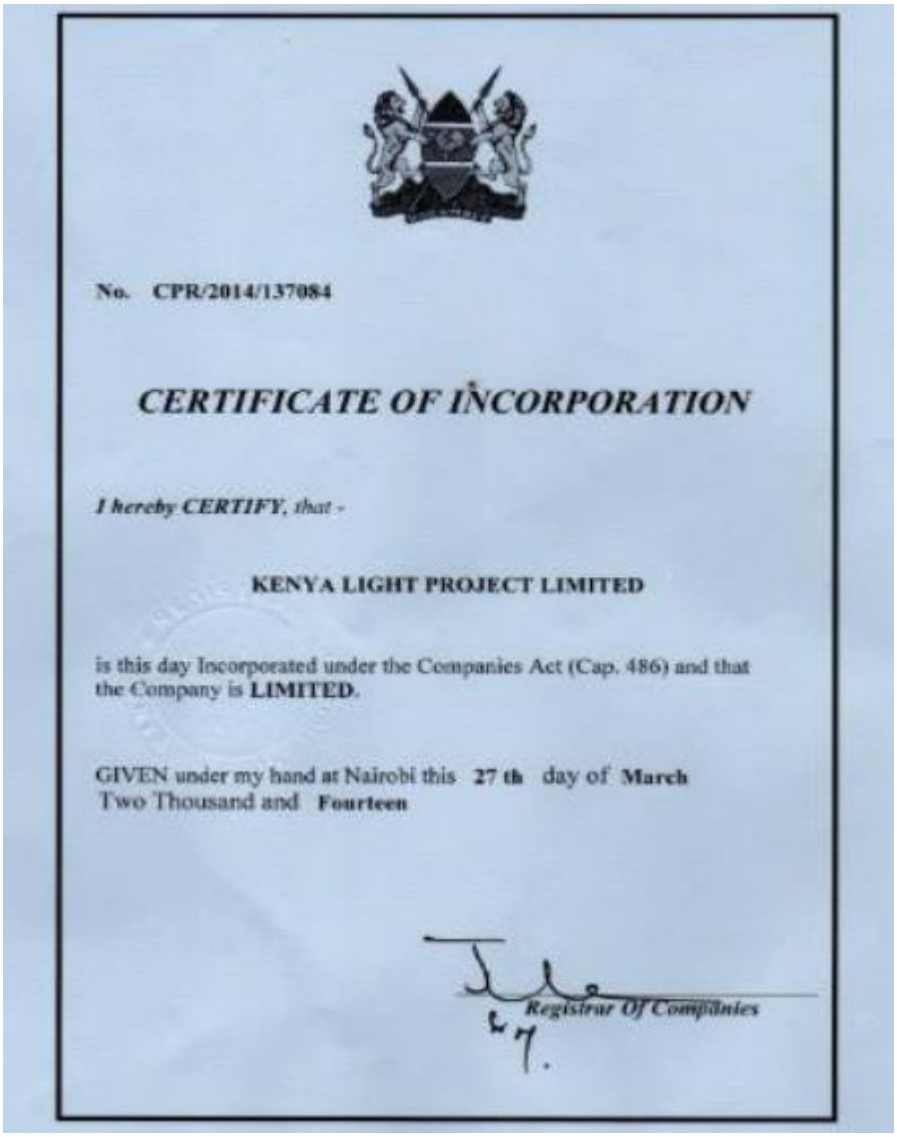
He formed the Kenyalight project; a company partnering with Joe Mwai, a Kenyan National, businessman with an interest in environmental work and climate change mitigation and today a joint director of KENYALIGHT-PROJECT LTD. Both Alan and Joe put there undoubted solar expertise and local knowledge to work in aid of the indigenous Maasai people of Kenya. The worthy cause was to assist in replacing the use of dangerous and toxic kerosene used for lighting with small solar PV panels, enough for each household to run a light and perhaps telephone charger. The project was successful and Alan and Joe learnt a lot about the Kenyan electricity issues and made valuable contacts.

Kenyalight were approached in 2012 by Tobias Panofen Project Coordinator of the Frankfurt School of Finance & Management gemeinnützige GmbH, an appointed organisation of the United Nations Environment Programme – Renewable Energy Performance Platform to assist in the development of Solar PV First Mover projects and they fed into this programme technical information on Solar Farms. The UNEP – REPP programme has enabled the current development of sixteen First Mover solar farm tender projects in Kenya.

Alan and Joe's hands-on work eventually lead them to an introduction the Ministry in Nairobi and discussion for their development work took place to understand the Governments opinions. Following numerous meetings and discussions we will develop the 10MW Solar Farm for Konsa City to support Kenya's economic growth. Alan and Joe partnered in KENYALIGHT-PROJECT LTD in 2014 to drive this project forward.

As indicated we have developed the Resource Ownership concept for the Konsa City - Kenya solar farm, where the Local Government and peoples in an area of the solar farm would receive 1% of revenue from the solar farm together with 1% revenue share also going to the landowner – this ensures Sustainable Energy development for Kenya. Several meetings have been held with the state owned electricity companies, the Governments Minister for Energy, local Government officials and the Deputy President of Kenya to garner the necessary top-level support and driving forces behind the projects that are now offered for investment. Investors have now been identified to assist with funding stage one.

5. Registration Certificate Kenyalight Project Ltd



No. CPR/2014/137084

CERTIFICATE OF INCORPORATION

I hereby CERTIFY, that -

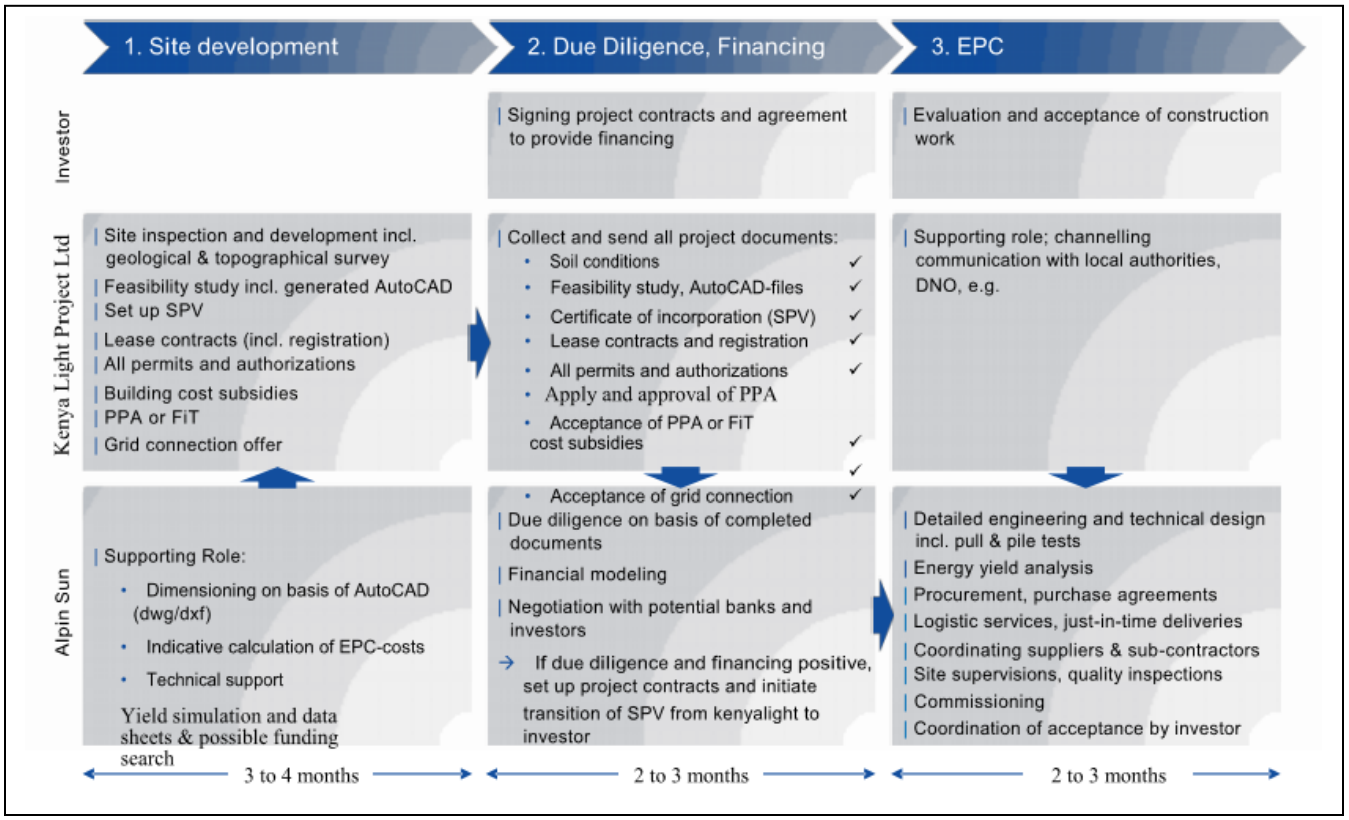
KENYA LIGHT PROJECT LIMITED

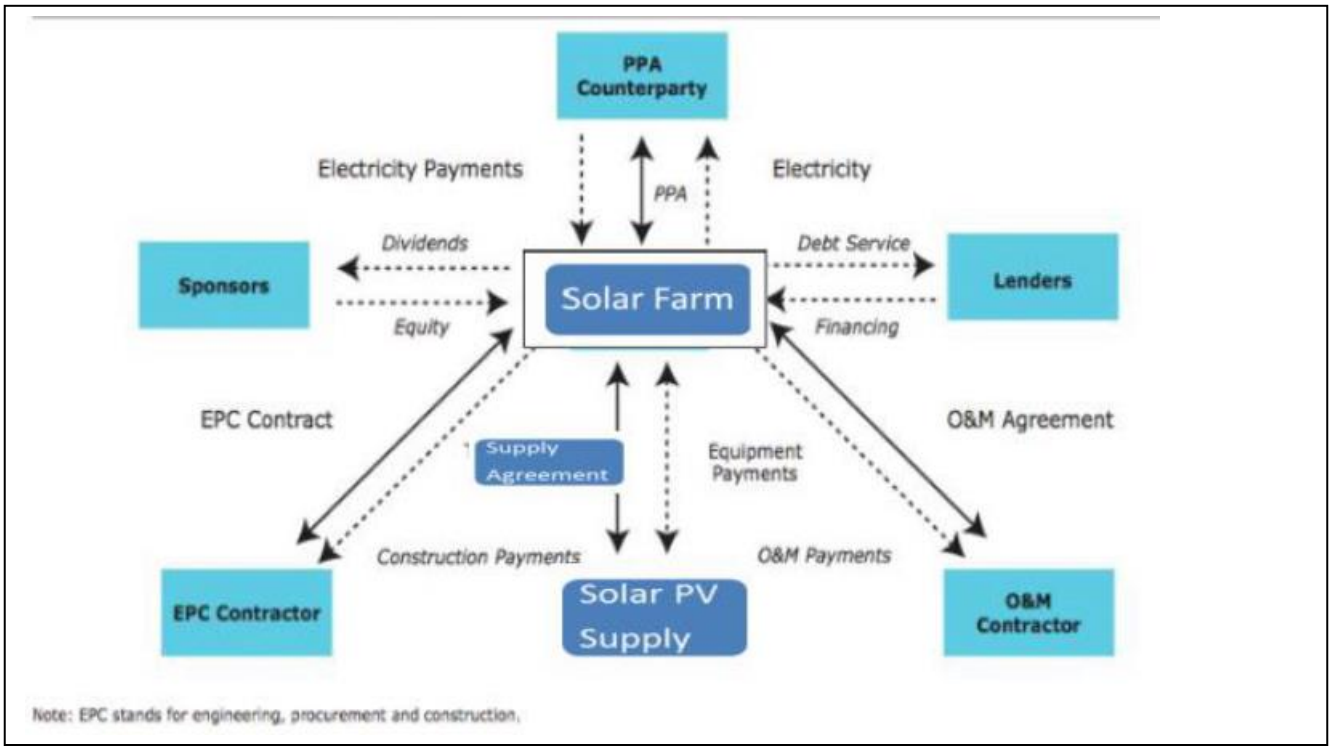
is this day Incorpoeated under the Companies Act (Cap. 486) and that the Company is **LIMITED**.

GIVEN under my hand at Nairobi this **27 th** day of **March** Two Thousand and **Fourteen**

Registrar Of Companies

6. Flow chart of responsibilities





7. TECHNICAL PARAMETERS

Kenya being astride the equator and extending four degrees on either side, receives a considerable amount of solar radiation. Early assessment by Ministry of Energy indicated that the country received on average 6.6 kWh per square meter per day.

The said project location has considerable amount of solar radiation and therefore it is a good site for solar installation of the said 10MW project.

The technology to be used and all the technical aspects which include drawings and tables of expected solar irradiation levels are attached to this report as an appendix.

Typical Solar Farm Generator for Green Renewable Energy

8. Performance of Grid-connected PV

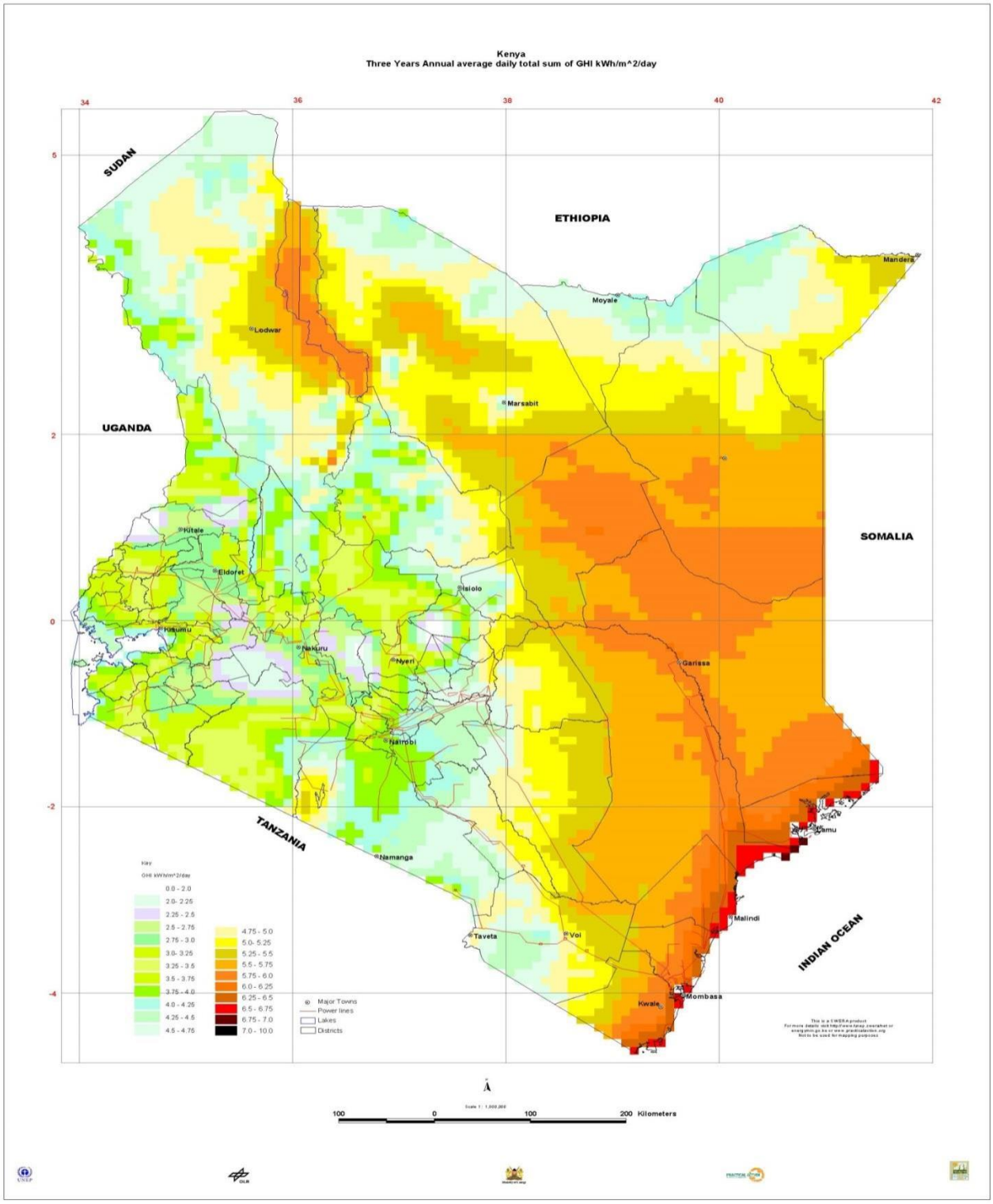
Inclined axis tracking system inclination=1°				
Month	**E_d**	**E_m**	**H_d**	**H_m**
Jan	70.50	2190	9.00	279
Feb	72.30	2020	9.31	261
Mar	70.70	2190	9.11	282
Apr	60.00	1800	7.64	229
May	56.30	1750	7.05	218
Jun	48.80	1460	6.06	182
Jul	46.50	1440	5.78	179
Aug	49.60	1540	6.24	194
Sep	63.50	1900	8.05	241
Oct	64.20	1990	8.18	254
Nov	58.40	1750	7.41	222
Dec	63.30	1960	8.02	249
Yearly average	**60.3**	**1830**	**7.52**	**229**
Total for year		**22000**		**2740**

E_d: Average daily electricity production from the g system (kWh)
E_m: Average monthly electricity production from tl system (kWh)
H_d: Average daily sum of global irradiation per squ meter received by the modules of the given system (kWh/m^2)
H_m: Average sum of global irradiation per square n received by the modules of the given system (kWh

9.

Technical Detail – 10MW Solar Farm for Konsa City in kenya (specific design is currently underway by ALPIN Sun GmbH this week).

10. Solar Radiation Map



11. ENVIRONMENTAL AND SOCIAL PARAMETERS

The environmental impact and its social impact implications will be put into consideration during the development of this project.

The Initial Environmental Impact Assessment will be done in order to determine whether the proposed project will have adverse or mild effects on the environment and to tell whether to carry out a full Environmental Impact Assessment or a full Environmental Impact Study.
Either of the two will be accompanied by a Comprehensive Mitigation Plan which describes the arrangements for implementing mitigation measures to reduce the 'would be' impacts on the surrounding environment.

The following template represents the "proto type" case study of the Environmental Impact Assessment that will follow after the investor is granted an Expression of Interest Permit by the Ministry of Energy;

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12. FINANCIAL AND ECONOMIC PARAMETERS OF THE PROJECT *(PRELIMINARY COST-BENEFIT ANALYSIS).*

The fundamental question of whether Solar photovoltaic (PV) makes economic sense as a power resource can be addressed with a basic economic benefit-cost (B/C) analysis, in which the levelled cost of electricity produced with a PV system is compared to the levelled value of its output.

In addition, the nature and magnitude of subsidies, impact of the solar power production on electric rates, and the degree of cost shifting among utility customers are also important factors to consider.

There are numerous ways to think about economic benefits of a given project, but one common approach is to derive a Benefit/Cost ratio with the net present value (NPV) of project benefits in the numerator and the NPV of project costs in the denominator.

$$\text{B/C Ratio} = \frac{\text{Net present value of project benefits}}{\text{Net present value of project costs}}$$

B/C ratio>1 means the project is economic, as benefits exceed costs.
B/C ratio<1 means the project is uneconomic, as costs exceed benefits.

The relative cost-effectiveness of projects can be assessed by comparing their benefit-cost ratios; the higher the B/C ratio, the greater the economic value of the project and therefore the more viable the project is.

However, it is important to note that there is no any single, standard cost-benefit modelling approach that is accepted by all as a blue print. The results and conclusions might be different depending on how the analysis is conducted. For that reason, this pre-feasibility study considered at least three key case scenarios of the modelling that will crucially affect the results:

(i) The perspective of the solar power customers in gauging the costs and benefits of the project
(ii) The perspective of the non-solar power customers in gauging the costs and benefits of the project
(iii) The perspective of the general society in gauging the costs and benefits of the project

In principle, all the three groups of people examined the project in terms of the advantages and the disadvantages it is going to have on them ("affected people") per se. In this respect, now that the installation will not be a stand-alone project but it will rather be fed to the national grid, all the 3 groups mentioned above are affected.

The benefit-cost assessment can differ across the stakeholder groups because the specific terms included in the respective benefit-cost equations vary across the groups. As discussed below, there are a number of reasons for this, but one factor is the presence of subsidies.

Many solar projects benefit from various types of "societal" subsidies from the governments of those particular countries. In that line, Kenya is one of the 60 countries who are committed to promote the usage of renewable energy such as solar and wind power in terms of tax reliefs and other forms of government subsidies. This shows that subsidies exist for solar PV, and they might affect the B/C ratio in a positive way for this particular proposed project.

The projected project EPC cost is estimated at 13Million USD and total build costs at 48.2 million USD and it will be completed within a maximum of 24 months and to live for at least 25 years before any other major installation such as replacement of solar panels and other infrastructure to be made. The overhead infrastructure (power lines) will be constructed over a distance of about 1km from the project site.

Considering this proposed project as a hypothetical power project with an initial one year peak load of 25 MW and sales of 0.12 USD per KWh.

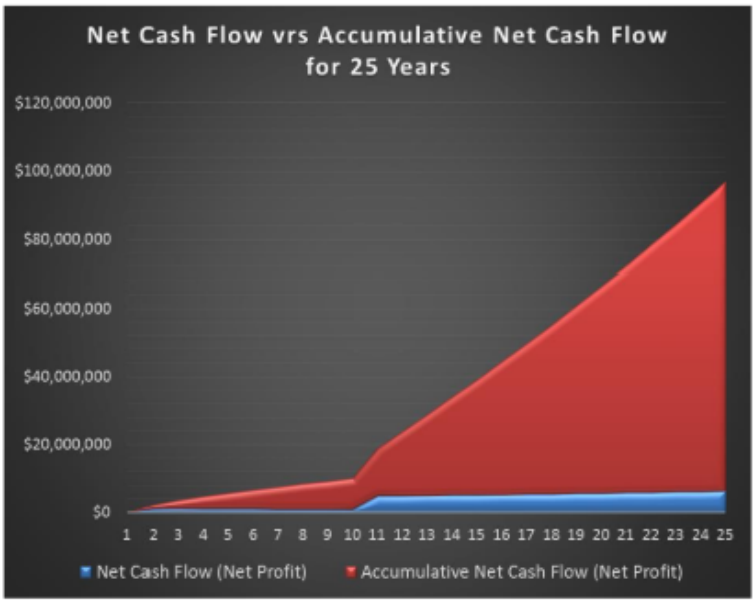
However, the benefits of this project supersede its costs and therefore it is economically viable and therefore recommended for approval. For instance, it will earn a lot of revenue to the investors and also to the government in form of taxes. It will also benefit the local communities in form of corporate social responsibilities projects by the power company. These benefits are illustrated in the concept paper documents attached to this report as indexes.

Stage One - Pre - Build Stage Finance - $268,355 or KSH 25,000,000

No.	Description	Cost(KSH)
1	Land Arrangements	
	Site Cadastral survey	100,000
	Topographical survey	1,800,000
	Valuation of leased land	200,000
	Community Engagement	250,000
	Leasing Agency/ Negotiations	100,000
	Lease Registration	50,000
	Lease payments	50,000
	Aerial Site Maps/ Photography	250,000
	Legal Fees	
	Lease Arrangements	
	Legal Review	50,000
2	**Consultancy**	KES 20,000
	Prefeasibility Study /EOI	
	Feasibility Study	150000
	Project development advisory	250000
		250,000
	Legal Fees	
	Lease Arrangements	
	Legal Review	50,000
2	**Consultancy**	KES 20,000
	Prefeasibility Study /EOI	
	Feasibility Study	150000
	Project development advisory	250000
		250,000
3	**Engineering/ Design**	
	Conceptual Engineering/ Design	
	Preliminary KPLC Grid Lad Analysis	5,000,000
	Electrical connection Study	250,000
	Resource Assessment	2,000,000
	Financial Analysis	2,000,000
		200,000
4	**Regulatory /Compliance Assessments**	
	Initial EIA	
	Full EIA	400000
	EIA Governemnt Fee	1000000
	PPA Negotiation	KES 4,100,000
	ERC Survey of Regulations	KES 500,000
	County Authority Building and Permit/ Planning Zone Regs	KES 100,000
	Community Sensitization	KES 200,000
5	Change of User	KES 250,000
6	Management/ Admin/ Logistical Cost	200000
	Sub Total	
	Contigencies	
	TOTALS	
		KES 1,860,000
		KES 25,000,000

Financial Analysis - 25MW Solar Farms in Nakuru – Kenya

PROJECT AT A GLANCE
Return on Investment (ROI) %
7.54%
Internal Rate of Return (IRR) %
3.94%
Net Present Value (NPV) $
$91,520,113
Averaged Yearly Net Profit
$3,632,979
Payback in Years Based on EBITD
7.23
Loan Amount $
$31,200,000
Deposit Amount $
$17,000,000
Loan Repayment in Years
10.00
Interest Rate on Loan
5.00%



Project can be funding via 100% Debt funding or Debt:Equity so in the above case $31.2 m : $17 m

1st Year Break Even Analysis			
Solar Plant Output %	Power Produced kW/y	Power Sales USD	Fixed Costs USD
100%	46,950,000	$5,634,000	$5,607,665
95%	44,602,500	$5,352,300	$5,607,665
90%	42,255,000	$5,070,600	$5,607,665
85%	39,907,500	$4,788,900	$5,607,665
80%	37,560,000	$4,507,200	$5,607,665
75%	35,212,500	$4,225,500	$5,607,665
70%	32,865,000	$3,943,800	$5,607,665
65%	30,517,500	$3,662,100	$5,607,665
60%	28,170,000	$3,380,400	$5,607,665
55%	25,822,500	$3,098,700	$5,607,665
50%	23,475,000	$2,817,000	$5,607,665
45%	21,127,500	$2,535,300	$5,607,665
40%	18,780,000	$2,253,600	$5,607,665
35%	16,432,500	$1,971,900	$5,607,665
30%	14,085,000	$1,690,200	$5,607,665
25%	11,737,500	$1,408,500	$5,607,665
20%	9,390,000	$1,126,800	$5,607,665
15%	7,042,500	$845,100	$5,607,665
10%	4,695,000	$563,400	$5,607,665
5%	2,347,500	$281,700	$5,607,665
0%	0	$0	$5,607,665

1st Year Break Even Analysis		
Power Produced Required kW/y	Minimum Solar Plant Output	Break Even Target Sales USD
46,730,541	99.53%	$5,607,665
Variables Used		
100% Solar Plant Output kW/y	wer Price (USD per kW/h) - refer	Fixed Costs USD
46,950,000	0.12	$5,607,665

25 Year profit and loss projection

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
Revenue (Sales)	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**	**Year 7**	**Year 8**	**Year 9**	**Year 10**	**Year 11**	**Year 12**	**Year 13**	**Year 14**	**Year 15**	**Year 16**	**Year 17**	**Year 18**	**Year 19**	**Year 20**	**Year 21**	**Year 22**	**Year 23**	**Year 24**	**Year 25**
Power Sales	5,634,000	5,774,005	5,917,339	6,064,078	6,214,294	6,368,066	6,525,472	6,686,591	6,851,503	7,020,293	7,193,044	7,369,841	7,550,773	7,735,927	7,925,395	8,119,269	8,317,643	8,520,611	8,728,272	8,940,724	9,158,068	9,380,405	9,607,841	9,840,480	10,078,431
Total Revenue (Sales)	5,634,000	5,774,005	5,917,339	6,064,078	6,214,294	6,368,066	6,525,472	6,686,591	6,851,503	7,020,293	7,193,044	7,369,841	7,550,773	7,735,927	7,925,395	8,119,269	8,317,643	8,520,611	8,728,272	8,940,724	9,158,068	9,380,405	9,607,841	9,840,480	10,078,431
Accumulated Revenue	5,634,000	11,408,005	17,325,344	23,389,422	29,603,716	35,971,783	42,497,255	49,183,845	56,035,348	63,055,641	70,248,685	77,618,526	85,169,299	92,905,226	100,830,621	108,949,891	117,267,533	125,788,145	134,516,417	143,457,141	152,615,209	161,995,614	171,603,454	181,443,934	191,522,365
Expenses (Costs)																									
Salaries																									
Managing Director (Alan)	11,964	12,323	12,693	13,073	13,466	13,870	14,286	14,714	15,156	15,610	16,079	16,561	17,058	17,570	18,097	18,640	19,199	19,775	20,368	20,979	21,608	22,257	22,924	23,612	24,320
Director (Joe)	10,716	11,037	11,369	11,710	12,061	12,423	12,795	13,179	13,575	13,982	14,401	14,833	15,278	15,737	16,209	16,695	17,196	17,712	18,243	18,791	19,354	19,935	20,533	21,149	21,783
Director (Dr Waweru)	11,292	11,631	11,980	12,339	12,709	13,091	13,483	13,888	14,304	14,733	15,176	15,631	16,100	16,583	17,080	17,593	18,120	18,664	19,224	19,801	20,395	21,006	21,637	22,286	22,954
Total Salary	33,972	34,991	36,041	37,122	38,236	39,383	40,564	41,781	43,035	44,326	45,656	47,025	48,436	49,889	51,386	52,927	54,515	56,151	57,835	59,570	61,357	63,198	65,094	67,047	69,058
Other Expenses																									
Repairs and Maintce to Plant	225,000	231,750	238,703	245,864	253,239	260,837	268,662	276,722	285,023	293,574	302,381	311,453	320,796	330,420	340,333	350,543	361,059	371,891	383,047	394,539	406,375	418,566	431,123	444,057	457,379
Land Rent(100 acres)	6,900	7,107	7,320	7,540	7,766	7,999	8,239	8,486	8,741	9,003	9,273	9,551	9,838	10,133	10,437	10,750	11,072	11,405	11,747	12,099	12,462	12,836	13,221	13,618	14,026
Landholder/ Council/ Ministers 5% Revenue	281,700	288,700	295,867	303,204	310,715	318,403	326,274	334,330	342,575	351,015	359,652	368,492	377,539	386,796	396,270	405,963	415,882	426,031	436,414	447,036	457,903	469,020	480,392	492,024	503,922
Security	25,000	25,750	26,523	27,318	28,138	28,982	29,851	30,747	31,669	32,619	33,598	34,606	35,644	36,713	37,815	38,949	40,118	41,321	42,561	43,838	45,153	46,507	47,903	49,340	50,820
Insurance	50,000	51,500	53,045	54,636	56,275	57,964	59,703	61,494	63,339	65,239	67,196	69,212	71,288	73,427	75,629	77,898	80,235	82,642	85,122	87,675	90,306	93,015	95,805	98,679	101,640
Self Electricity Consumption	50,000	51,500	53,045	54,636	56,275	57,964	59,703	61,494	63,339	65,239	67,196	69,212	71,288	73,427	75,629	77,898	80,235	82,642	85,122	87,675	90,306	93,015	95,805	98,679	101,640
Commission	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Eco Plan Kenya Ltd	268,355	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Other Expenses	906,955	656,307	674,502	693,198	712,409	732,148	752,431	773,272	794,685	816,688	839,296	862,525	886,393	910,916	936,113	962,002	988,602	1,015,932	1,044,012	1,072,863	1,102,504	1,132,959	1,164,249	1,196,397	1,229,426
Project Loan																									
Loan Interest	1,503,971	1,377,748	1,245,068	1,105,599	958,995	804,891	642,902	472,625	293,637	105,491	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Principal Repayment of Loan	2,467,122	2,593,344	2,726,025	2,865,493	3,012,098	3,166,202	3,328,191	3,498,468	3,677,456	3,865,601	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Loan	3,971,093	3,971,093	3,971,093	3,971,093	3,971,093	3,971,093	3,971,093	3,971,093	3,971,093	3,971,093	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Operating (Costs)	4,912,020	4,982,391	4,881,636	4,701,413	4,721,737	4,742,624	4,764,088	4,786,146	4,808,813	4,832,107	884,951	909,550	934,829	960,805	987,499	1,014,929	1,043,117	1,072,082	1,101,847	1,132,433	1,163,862	1,196,157	1,229,343	1,263,444	1,298,484
Gross Profit	721,980	1,111,614	1,235,704	1,362,664	1,492,557	1,625,442	1,761,384	1,900,445	2,042,690	2,188,186	6,308,092	6,460,291	6,615,944	6,775,122	6,937,897	7,104,340	7,274,526	7,448,529	7,626,425	7,808,291	7,994,206	8,184,248	8,378,497	8,577,036	8,779,947
Tax and Written Down Value																									
Company Tax	0	0	0	183,174	401,782	606,581	799,824	983,506	1,159,397	1,329,071	1,466,245	1,565,178	1,656,487	1,747,026	1,831,549	1,912,709	1,991,069	2,067,199	2,141,487	2,214,352	2,286,144	2,357,171	2,427,709	2,496,000	2,562,262
Written Down Value (Yearly)	5,400,000	4,725,000	4,134,375	3,617,578	3,165,381	2,769,708	2,423,495	2,120,558	1,855,488	1,623,552	1,420,608	1,243,032	1,087,653	951,696	832,734	728,643	637,562	557,867	488,134	427,117	373,727	327,011	286,135	250,368	219,072
Net Profit	721,980	1,111,614	1,235,704	1,179,490	1,090,775	1,018,862	961,560	916,938	883,293	859,115	4,841,847	4,895,113	4,957,457	5,028,094	5,106,348	5,191,631	5,283,457	5,381,330	5,484,938	5,593,939	5,708,062	5,827,077	5,950,789	6,079,036	6,211,684
Accumulated Net Profit	721,980	1,833,594	3,069,297	4,248,788	5,339,563	6,358,424	7,319,984	8,236,922	9,120,215	9,979,331	14,821,178	19,716,291	24,673,748	29,701,842	34,808,190	39,999,821	45,283,257	50,664,588	56,149,525	61,743,465	67,451,527	73,278,604	79,229,393	85,308,428	91,520,113

25 YEAR PROJECT FINANCIALS (INCLUDING BORROWINGS OVER 10 YEAR PERIOD)										
Project Name: 25MW Limuru Solar			Year	Year	Year	Year	Year	Year	Year	Year	Year	Year
Return on Investment (ROI)	**7.54%**		0	1	2	3	4	5	6	7	8	9
SUMMARY												
Borrowings	Interest Rate @	5.00%	($31,200,000)									
Revenue Net Benefit				$5,634,000	$5,774,005	$5,917,339	$6,064,078	$6,214,294	$6,368,066	$6,525,472	$6,686,591	$6,851,503
Principle repayment on loan				($2,467,122)	($2,593,344)	($2,726,025)	($2,865,493)	($3,012,098)	($3,166,202)	($3,328,191)	($3,498,468)	($3,677,456)
Interest repayment on loan				($1,503,971)	($1,377,748)	($1,245,068)	($1,105,599)	($958,995)	($804,891)	($642,902)	($472,625)	($293,637)
Net Operating Costs				($1,636,572)	($691,298)	($710,543)	($730,320)	($750,645)	($771,531)	($792,995)	($815,053)	($837,720)
Taxation				0	0	0	($183,174)	($401,782)	($606,581)	($799,824)	($983,506)	($1,159,397)
Net Cash Flow			($48,200,000)	**$26,335**	**$1,111,614**	**$1,235,704**	**$1,179,490**	**$1,090,775**	**$1,018,862**	**$961,560**	**$916,938**	**$883,293**
Accumulative Net Cash Flow				**$26,335**	**$1,137,949**	**$2,373,652**	**$3,553,143**	**$4,643,918**	**$5,662,779**	**$6,624,339**	**$7,541,277**	**$8,424,570**
FINANCIAL METRICS												
	Discount Rate @	0.00%										
Internal Rate of Return (IRR)	**3.94%**											
Net Present Value (NPV)	**$90,824,468**											
EBITD (Earnings before Interest, Taxes & Depreciation)				**$3,997,428**	**$5,082,706**	**$5,206,796**	**$5,333,757**	**$5,463,650**	**$5,596,535**	**$5,732,477**	**$5,871,538**	**$6,013,783**
Payback in Years (Based on EBITD)	**7.23**											
CAPITAL PURCHASE												
0			($43,200,000)									

Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Year 21	Year 22	Year 23	Year 24	Year 25
$7,020,293	$7,193,044	$7,369,841	$7,550,773	$7,735,927	$7,925,395	$8,119,269	$8,317,643	$8,520,611	$8,728,272	$8,940,724	$9,158,068	$9,380,405	$9,607,841	$9,840,480	$10,078,431
($3,865,601)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
($105,491)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
($861,014)	($884,951)	($909,550)	($934,829)	($960,805)	($987,499)	($1,014,929)	($1,043,117)	($1,072,082)	($1,101,847)	($1,132,433)	($1,163,862)	($1,196,157)	($1,229,343)	($1,263,444)	($1,298,484)
($1,329,071)	($1,466,245)	($1,565,178)	($1,658,487)	($1,747,028)	($1,831,549)	($1,912,709)	($1,991,089)	($2,067,199)	($2,141,487)	($2,214,352)	($2,286,144)	($2,357,171)	($2,427,709)	($2,498,000)	($2,568,262)
$859,115	**$4,841,847**	**$4,895,113**	**$4,957,457**	**$5,028,094**	**$5,106,348**	**$5,191,631**	**$5,283,437**	**$5,381,330**	**$5,484,938**	**$5,593,939**	**$5,708,062**	**$5,827,077**	**$5,950,789**	**$6,079,036**	**$6,211,684**
$9,283,686	**$14,125,533**	**$19,020,646**	**$23,978,103**	**$29,006,197**	**$34,112,545**	**$39,304,176**	**$44,587,612**	**$49,968,943**	**$55,453,880**	**$61,047,820**	**$66,755,882**	**$72,582,959**	**$78,533,748**	**$84,612,783**	**$90,824,468**
$6,159,279	**$6,308,092**	**$6,460,291**	**$6,615,944**	**$6,775,122**	**$6,937,897**	**$7,104,340**	**$7,274,526**	**$7,448,529**	**$7,626,425**	**$7,808,291**	**$7,994,206**	**$8,184,248**	**$8,378,497**	**$8,577,036**	**$8,779,947**

REVENUE													
Power Produced Mega-Watts (MW)	degraded 0.8 % P.A. (aging of cells)			46,950.00	46,715.25	46,480.50	46,245.75	46,011.00	45,776.25	45,541.50	45,306.75	45,072.00	44,837.25
Revenue (USD)				$5,634,000	$5,774,005	$5,917,339	$6,064,078	$6,214,294	$6,368,066	$6,525,472	$6,686,591	$6,851,503	$7,020,293
Total Revenue				**$5,634,000**	**$5,774,005**	**$5,917,339**	**$6,064,078**	**$6,214,294**	**$6,368,066**	**$6,525,472**	**$6,686,591**	**$6,851,503**	**$7,020,293**
COSTS													
Startup costs			($5,000,000)										
	Inflation Rate @	3.00%											
Total costs				**($1,636,572)**	**($691,298)**	**($710,543)**	**($730,320)**	**($750,645)**	**($771,531)**	**($792,995)**	**($815,053)**	**($837,720)**	**($861,014)**
EQUITY AVAILABLE / DEPOSIT													
Cash Funds for Project (Deposit)			$17,000,000										
COMMISSION													
Commission Paid to Financial Adviser	Rate @	2.00%	($964,000)										
DEPRECIATION (Written Down Value)													
	WDV Opening			$43,200,000	$37,800,000	$33,075,000	$28,940,625	$25,323,047	$22,157,666	$19,387,958	$16,964,463	$14,843,905	$12,988,417
	Depreciation (Assumed) @	12.50%		$5,400,000	$4,725,000	$4,134,375	$3,617,578	$3,165,381	$2,769,708	$2,423,495	$2,120,558	$1,855,488	$1,623,552
	WDV Closing			$37,800,000	$33,075,000	$28,940,625	$25,323,047	$22,157,666	$19,387,958	$16,964,463	$14,843,905	$12,988,417	$11,364,865
Total Depreciation				**($5,400,000)**	**($4,725,000)**	**($4,134,375)**	**($3,617,578)**	**($3,165,381)**	**($2,769,708)**	**($2,423,495)**	**($2,120,558)**	**($1,855,488)**	**($1,623,552)**
TAXATION (Flat rate without credits)													
Revenue				$5,634,000	$5,774,005	$5,917,339	$6,064,078	$6,214,294	$6,368,066	$6,525,472	$6,686,591	$6,851,503	$7,020,293
Deductible Expenditure													
	Operating Costs			($1,636,572)	($691,298)	($710,543)	($730,320)	($750,645)	($771,531)	($792,995)	($815,053)	($837,720)	($861,014)
	Loan Interest			($1,503,971)	($1,377,748)	($1,245,068)	($1,105,599)	($958,995)	($804,891)	($642,902)	($472,625)	($293,637)	($105,491)
	Depreciation			($5,400,000)	($4,725,000)	($4,134,375)	($3,617,578)	($3,165,381)	($2,769,708)	($2,423,495)	($2,120,558)	($1,855,488)	($1,623,552)

44,602.50	44,367.75	44,133.00	43,898.25	43,663.50	43,428.75	43,194.00	42,959.25	42,724.50	42,489.75	42,255.00	42,020.25	41,785.50	41,550.75	41,316.00
$7,193,044	$7,369,841	$7,550,773	$7,735,927	$7,925,395	$8,119,269	$8,317,643	$8,520,611	$8,728,272	$8,940,724	$9,158,068	$9,380,405	$9,607,841	$9,840,480	$10,078,431
$7,193,044	**$7,369,841**	**$7,550,773**	**$7,735,927**	**$7,925,395**	**$8,119,269**	**$8,317,643**	**$8,520,611**	**$8,728,272**	**$8,940,724**	**$9,158,068**	**$9,380,405**	**$9,607,841**	**$9,840,480**	**$10,078,431**
($884,951)	**($909,550)**	**($934,829)**	**($960,805)**	**($987,499)**	**($1,014,929)**	**($1,043,117)**	**($1,072,082)**	**($1,101,847)**	**($1,132,433)**	**($1,163,862)**	**($1,196,157)**	**($1,229,343)**	**($1,263,444)**	**($1,298,484)**
$11,364,865	$9,944,257	$8,701,225	$7,613,572	$6,661,875	$5,829,141	$5,100,498	$4,462,936	$3,905,069	$3,416,935	$2,989,818	$2,616,091	$2,289,080	$2,002,945	$1,752,577
$1,420,608	$1,243,032	$1,087,653	$951,696	$832,734	$728,643	$637,562	$557,867	$488,134	$427,117	$373,727	$327,011	$286,135	$250,368	$219,072
$9,944,257	$8,701,225	$7,613,572	$6,661,875	$5,829,141	$5,100,498	$4,462,936	$3,905,069	$3,416,935	$2,989,818	$2,616,091	$2,289,080	$2,002,945	$1,752,577	$1,533,505
($1,420,608)	**($1,243,032)**	**($1,087,653)**	**($951,696)**	**($832,734)**	**($728,643)**	**($637,562)**	**($557,867)**	**($488,134)**	**($427,117)**	**($373,727)**	**($327,011)**	**($286,135)**	**($250,368)**	**($219,072)**
$7,193,044	$7,369,841	$7,550,773	$7,735,927	$7,925,395	$8,119,269	$8,317,643	$8,520,611	$8,728,272	$8,940,724	$9,158,068	$9,380,405	$9,607,841	$9,840,480	$10,078,431
($884,951)	($909,550)	($934,829)	($960,805)	($987,499)	($1,014,929)	($1,043,117)	($1,072,082)	($1,101,847)	($1,132,433)	($1,163,862)	($1,196,157)	($1,229,343)	($1,263,444)	($1,298,484)
$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
($1,420,608)	($1,243,032)	($1,087,653)	($951,696)	($832,734)	($728,643)	($637,562)	($557,867)	($488,134)	($427,117)	($373,727)	($327,011)	($286,135)	($250,368)	($219,072)

year 11

Assessable Income				($2,906,543)	($1,020,042)	($172,647)	$610,580	$1,339,273	$2,021,936	$2,666,080	$3,278,355	$3,864,658	$4,430,235
Taxation	Taxation Rate @	30%		**0**	**0**	**0**	**($183,174)**	**($401,782)**	**($606,581)**	**($799,824)**	**($983,506)**	**($1,159,397)**	**($1,329,071)**

$3,864,658	$4,430,235	$4,887,484	$5,217,259	$5,528,291	$5,823,426	$6,105,162	$6,375,697	$6,636,964	$6,890,662	$7,138,292	$7,381,175	$7,620,479	$7,857,236	$8,092,363	$8,326,668	$8,560,875
($1,159,397)	**($1,329,071)**	**($1,466,245)**	**($1,565,178)**	**($1,658,487)**	**($1,747,028)**	**($1,831,549)**	**($1,912,709)**	**($1,991,089)**	**($2,067,199)**	**($2,141,487)**	**($2,214,352)**	**($2,286,144)**	**($2,357,171)**	**($2,427,709)**	**($2,498,000)**	**($2,568,262)**

year 8

Please see xls. Version of financials attached to FIT EOI for more clarity and in-depth study of financials.

13.

Alpin Sun GmbH
Zum Wasserwerk 12
D-15537 Erkner (bei Berlin)

The Managing Director,
Kenyalight-Project Ltd
Joe Mwai, Mwai House,
46 Biashara Street, Limuru
Kenya, PO Box, 146

26/01/2015

LETTER OF INTENT FOR THE NAKURU 25MW SOLAR FARM PROJECT, KENYA

Dear Mr Joseph Mwai and Mr Alan Brewer,

We hereby express our interest to work together with the two 25MW projects named Mai-Mahiu 25MW and Limuru 25MW. Projects in the Kenyalight Project portfolio.

Our company, Alpin SUN GmbH has cash funds in HVB HypoVereinsBank Berlin AG.

We are interested in a partnership for the EPC work of the 25MW project in Kenya, under Kenyalight-Project Ltd. Alpin Sun, hereby, expresses their intent to work alongside the above company to develop this project in Kenya.

We propose to undertake the EPC work of the projects and can offer all technical support, drawings, calculations for grid connections and further understanding of the electrical and technical aspects of the design. These will all be charged, along with construction, we can also offer the construction work and will hold full rights to undertake all aspects of construction. This work can then be sub-contracted to local companies and workers as Alpin Sun feels is worthwhile for the project. Alpin Sun can also offer considerable project planning, business accumen and consulting.

We require Kenyalight-Project to have the following list regarding their projects:

- A secured company and SPV.
- A Lease Agreement with the landowner.
- The Grid Connection quotation.
- The agreed PPA for each project guarenteed.

Surveys and permits to enable the construction of the project and all other necessary work

All funding related to the pojects will be dealt with per project. Funding can be gained from a variety of sources. Alpin Sun hereby, shows interest in these 25MW projects and intent to put funders forward for the project at the time when the project is in a position to be built or with substanial equity within the project. The funders will be given all information, including grid connections, design layout and proposed projections, along with the PPA and FiT to make full evaluation of the project and the terms of their committment to Kenyalight-Project Ltd directly and to the project through the government secured PPA and Feed-in-Tariff. Alpin Sun will offer to buy out the rights to any project at any given time.

Alpin Sun, by signing this agreement, hold the rights to be of first refusal, the EPC work for the 25MW project and with the above company. As way of a proof of intent and purpose, Alpin Sun will offer free of charge, an initial project design land and panel layout for the 25MW projects.

Alpin Sun GmbH

Adrian Ioance
Head of Overseas Departments

Kenyalight-Project Ltd

Mr Joseph Mwai
Managing Director

Mr Alan Brewer
Director

14. OPTIONS

There were three options which were explored during this feasibility study;

6.1[Option 1] Do Nothing

The 'do nothing' option was examined but it was found to have a lot of disadvantages.

There are a lot of costs involved with not proceeding with the project. These costs include the following;

(a) The country will miss the opportunity to add 10MW of power to its national grid. This will lead to less energy and less productivity and reduced pace towards industrialization.
(b) The would be local contractors and laborers will not get the chance to earn a livelihood.
(c) The potential investor from local and international market will miss an investment opportunity. This will make them to lose interest in investing in the country, thus lowering the economic productivity of Kenya as a country.
(d) The land is currently lying idle under very minimal subsistence farming. Taking this option will deny the owner of the land an opportunity to maximize the productivity of his farm.

6.2 [Option 2] Constructing a Hydroelectricity Generation Plant

6.2.1 Technical and Financial Feasibility

This option was examined but was found to be technically not feasible. This is because there is no major river that can have the capacity to generate electric power in the region. In addition, the costs to look for another region and to build the infrastructure from the plant to the national grid superseded the resources of the investor. It would also depend on the availability of land which is also not readily available.

6.3 [Option 3] Constructing a Wind power Generation Plant

6.3.1 Technical and Financial Feasibility

This option was examined but was found to be technically not feasible. This is because there are no strong winds which have the capacity to generate electric power in the region. In addition, the costs to look for another region and to build the infrastructure from the plant to the national grid superseded the resources of the investor. It would also depend on the availability of land which is also not readily available.

6.4 [Option 4] Constructing a Solar Power Generation Plant

6.4.1 Technical and Financial Feasibility

This option was examined and it was found to be the most technically feasible option. This is because there are strong solar radiation levels which have the capacity to generate sufficient electric power in the region. This is indicated in a separate document attached to this report as indexes.

It is also the most feasible in terms of cost as mentioned in the preliminary cost-benefit Analysis above. A detailed project cost and benefit report is attached to this report as an index.

6.5 Comparison of Options

Four options namely the 'Do Nothing', Hydro-power, Wind-power and Solar-power projects were compared.

Out of the four, the solar power appeared to be the most feasible option. This is a result of the type of natural resource found in the region which is the pre-determiner and also the financial feasibility in terms of the cost involved and the output realised from the investment.

15. RISKS AND BARRIERS TO THE PROJECT

The development of renewable energy systems is a capital-intensive process that most developing countries cannot undertake without financial support from development partners. However, there are some rampant investment risks which are the key barriers to investors in developing countries like Kenya.

The investment risks include political instability, low-carbon policy and currency value fluctuation, monopolization of energy production, transmission and distribution, as well as community non-involvement. Based on the identified risks, the study recommends the need for the Government to secure a sustainable political stability, strengthen laws and policies promoting foreign investment, establish currency-strengthening mechanism, open-up renewable energy market and promote community involvement.

The developer has sourced a partnership agreement with an international investor who has committed himself to fund the project and has written a letter of intent to fund the same. That letter has been attached to this report as one of the appendices.

ANNEXES

10MW Solar Farm site at Konsa City

alpin sun

Table of Contents

alpin sun

Enclosed in this document are the figures, timings and responsibilities for the EPC work for the 25MW Solar Farm projects in Kenya, in the Mai-Mahiu region and the Limuru area as discussed.

Alpin Sun GmbH is offering a wide range of skills and experience to accomplish the outlined works below. The following document when signed, agrees both parties, until both mutually agree to break the contract, is a contract for all the works included below, unless not adhered to by one of the parties.

Alpin Sun will become the main contractor and retains the right to sub contract out any part of the below agreement. Alpin Sun will oversee all of their work from their main office.

Engineering Design

- Detailed drawings from our experienced design engineers, including accessibly and logistical requirements.
- All structurall Calculations.
- Capacity Calculations.
- All electrical calculations.
- Design decisions will be discussed and made which are best for the system in terms of maintenance, efficiency, cost and the environment.

Procurement

Using a well-researched and tested supply Chain, Alpin Sun will utilize its relationships to provide the smooth running of the procurement procedures. Alpin Sun, as outlined below, will provide all the parts for the construction of the site, whether through existing or new contacts.

Construction

For the construction work, Alpin Sun will be the primary contractor for the work; so will take care of other contractors and responsibility for the work carried out on site. This will also be solely down to Alpin Sun, regarding who they choose and the volume of work they contract out. However, Kenyalight-Project Ltd can recommend and assist with the search for local contractors, if this work is needed to be carried out.

Communication will need to be frequent between Kenyalight-Project Ltd and Alpin Sun to ensure all permits, surveys and land layouts are produced by Kenyalight-Project Ltd and they can be transmitted to Alpin Sun to ensure compliance, so both parties can ensure agreement with the design and local authority regulations and electrical contractors.

Maintenance

- All equipment comes with guaranteed manufacture Warrenties. Operation and Maintenance can be quoted for the duration of the initial stages of the project.

Pricing per 25MW Project

Design	$600,000
Equipment	$36,500,000
Construction	$4,400,000
Total EPC Works	$41,500,000

Permits, Surveys, Grid Connection, Company Set-up etc are not included within this amount.
We are willing to discuss this pricing depending on the commitment of the grid connection.
All Equipment for construction purposes is included within our quote, however Alpin Sun chooses to purchase, hire or other means, the equipment necessary for the project.
All work undertaken by third parties, except where it is clearly stated, will be covered.
Alpin Sun retain the right to sub contract out as much or as little of the EPC, Engineering, Procurement and Construction work.

Payment will be made in Installments	
Initial Payment	$200,000
Equipment Payment	$25,000,000
Construction Payment	$12,000,000
Accreditation Payment	$4,300,000
Total EPC Works	$41,500,000

Alpin Sun GmbH
Kenyalight-Project Ltd

Adrian Ioance **Alan Brewer MSc**

Managing Director, Head of Overseas Departments

Business Plan

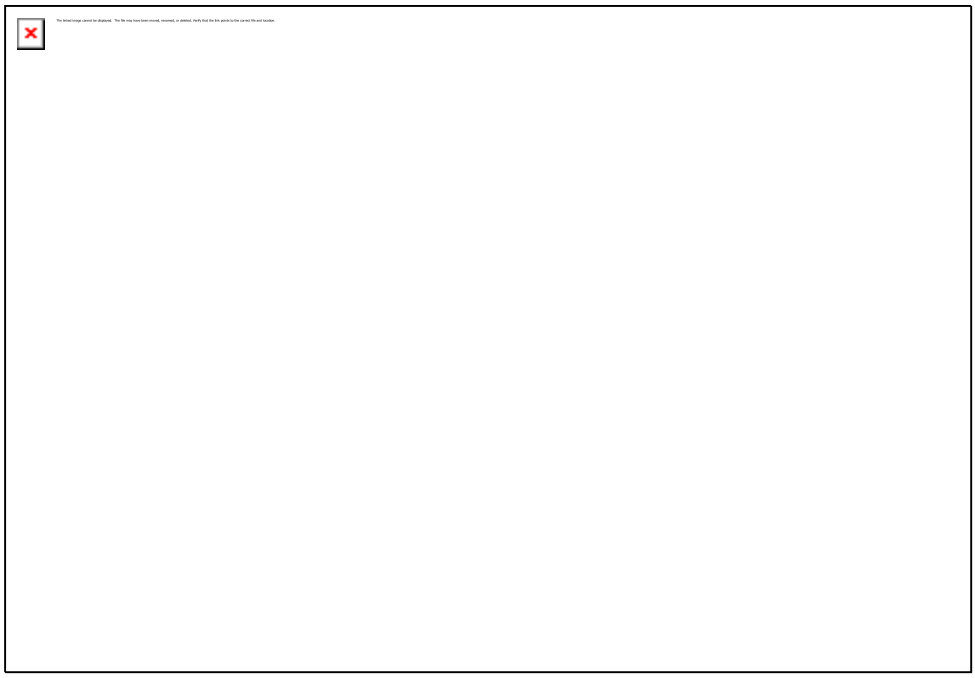
A. Executive Summary

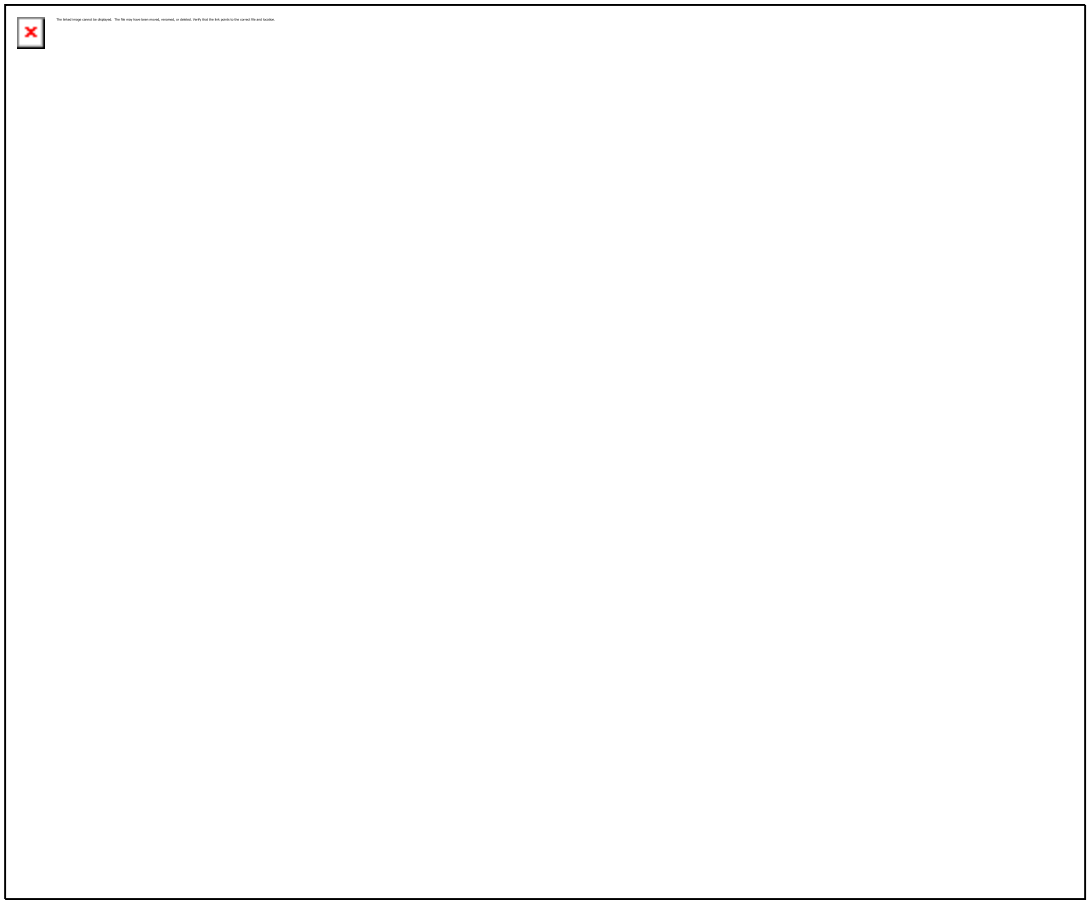
Group General Overview

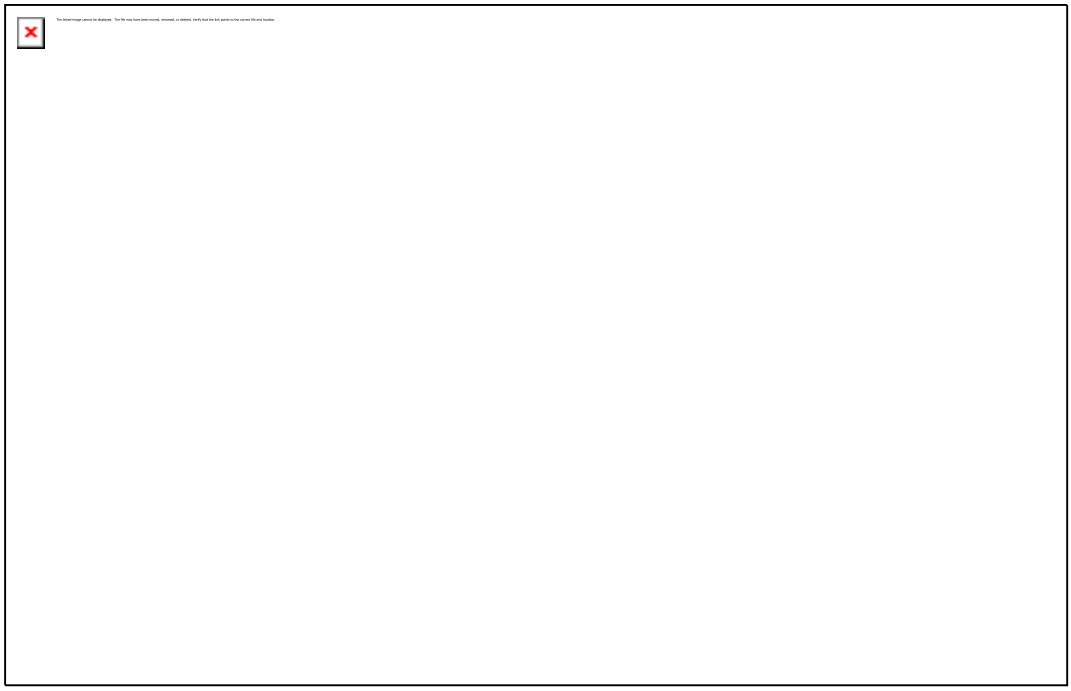
Alpin Sun brings together a group of Romanian- German societies, specialized in photovoltaic power plants. The foundations were laid in 2005 when Sun Farming was set up in Germany. It's a company whose activities are focused towards achieving their investment in photovoltaic plants in Germany. Sun Farming currently holds a portfolio of 40 MW, being a respected producer of renewable energy in Germany. By following the European trend of expanding the interest in renewable energy in Europe, in 2008, an international construction division broke away from the Sun Farming Company, becoming a stand-alone business, known today as the Alpine Sun GmbH.

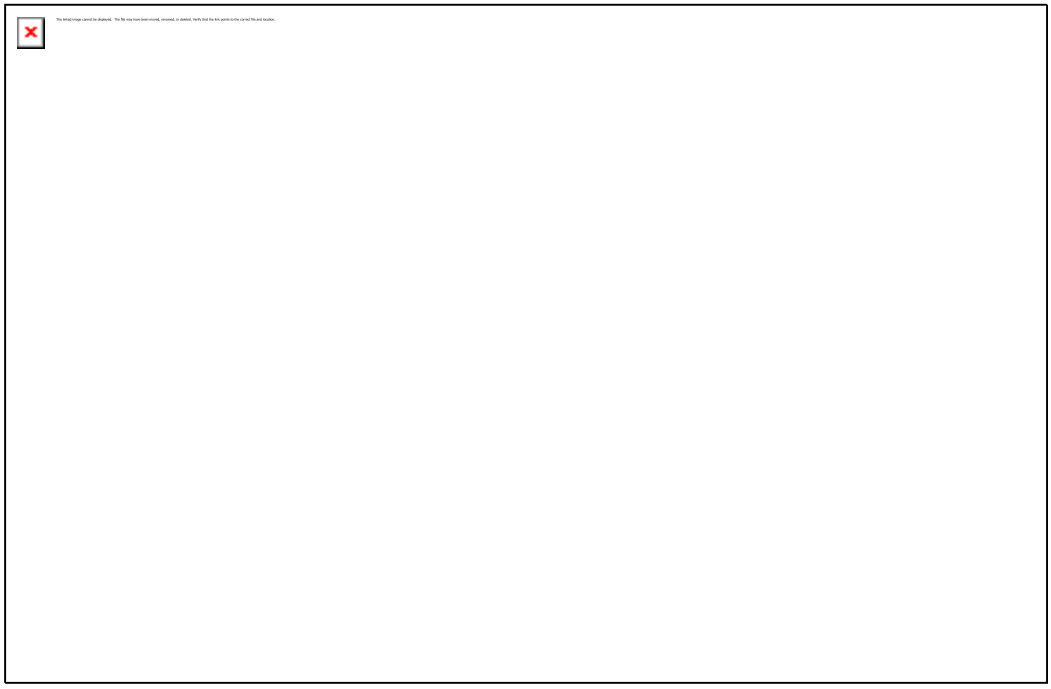
Alpin Sun has experienced a great evolution in recent years, by following several stages of development, starting by assembling plants and, later, encompassing the design and supplying of equipment, which is called the EPC. The next step towards the ascension of Alpin Sun activity was embedding project development activities and, later, the operation and maintenance of photovoltaic parks. Since its debut and up to now, Alpin Sun has completed more than 180 photovoltaic plants in Italy, Belgium, Germany and Romania. The most representative projects are conducted between 2012-2014 in Romania, totaling 34 MW, being utility scale projects with installed capacity between 1.5 MW to 7 MW.

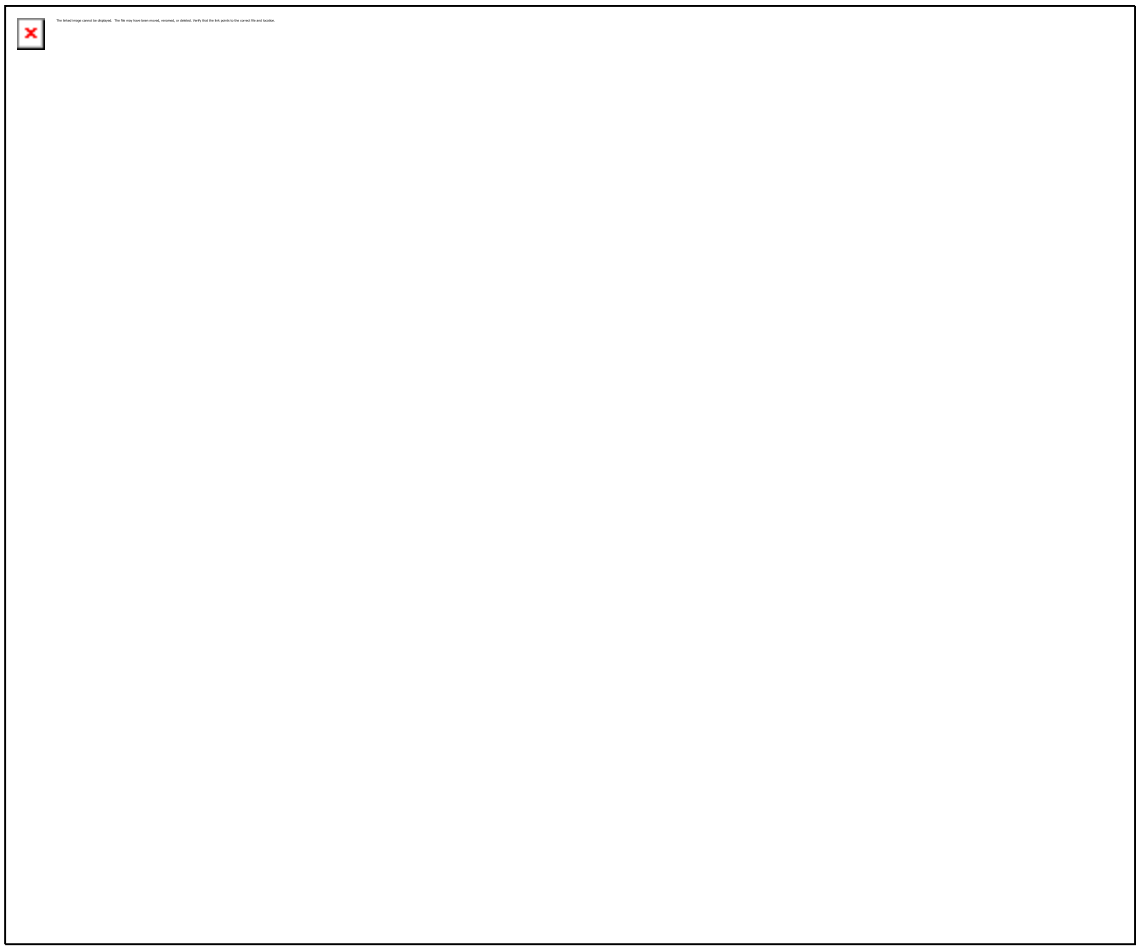
During this period, Alpin Sun has been very active on the development side, making up to now, more than 15 fully licensed projects, and totaling over 70 MW installed capacity. Some of these projects were sold to investors, along with EPC contracts, which constitute a part of the working basis of the company and a good source of cash. In order to streamline the operations, the Romanian society, Alpine Solar SA, was founded, taking over the Engineering and Construction activity, with over 100 employees in Romania, while the German Society still remains responsible for Procurement and international contracts. Regarding its own developed projects, they are carried out through project companies (SPV), according to the Romanian legislation, regulations related to the establishment and operation of electricity producers and specific commercial usage.

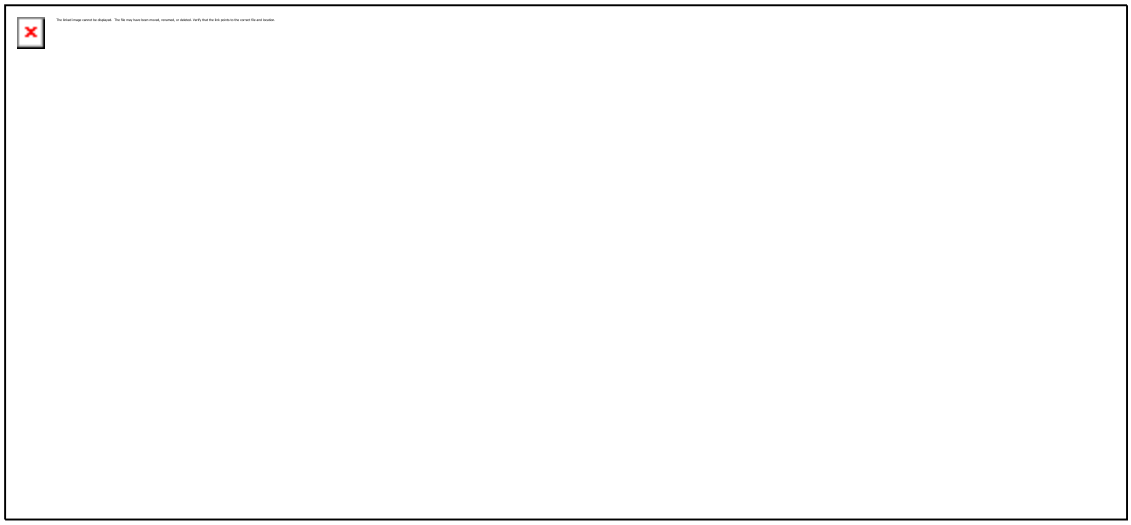


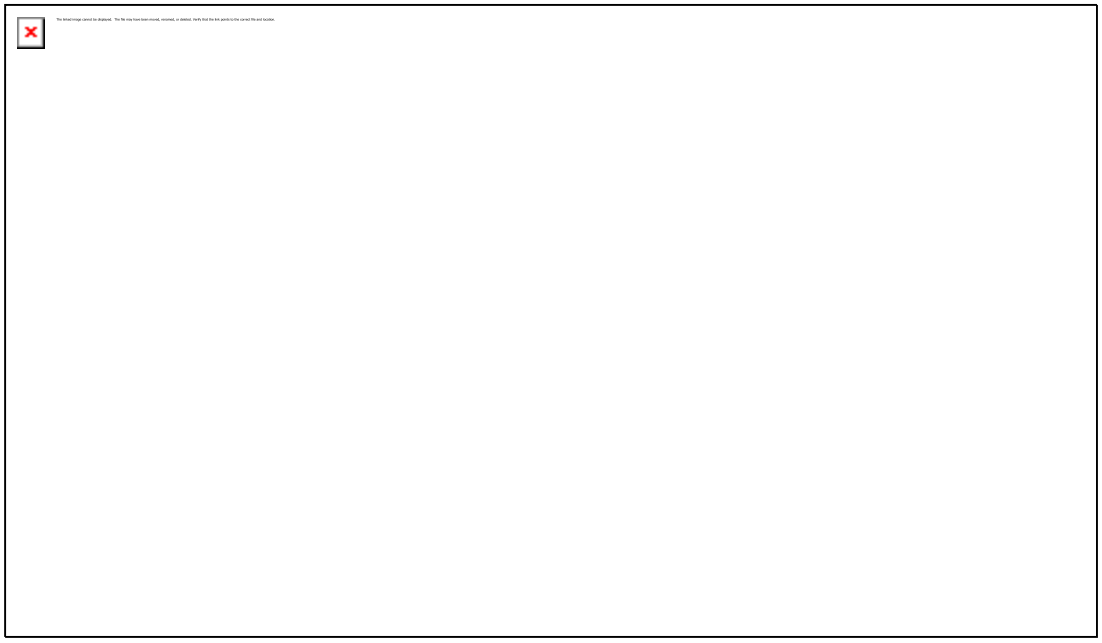


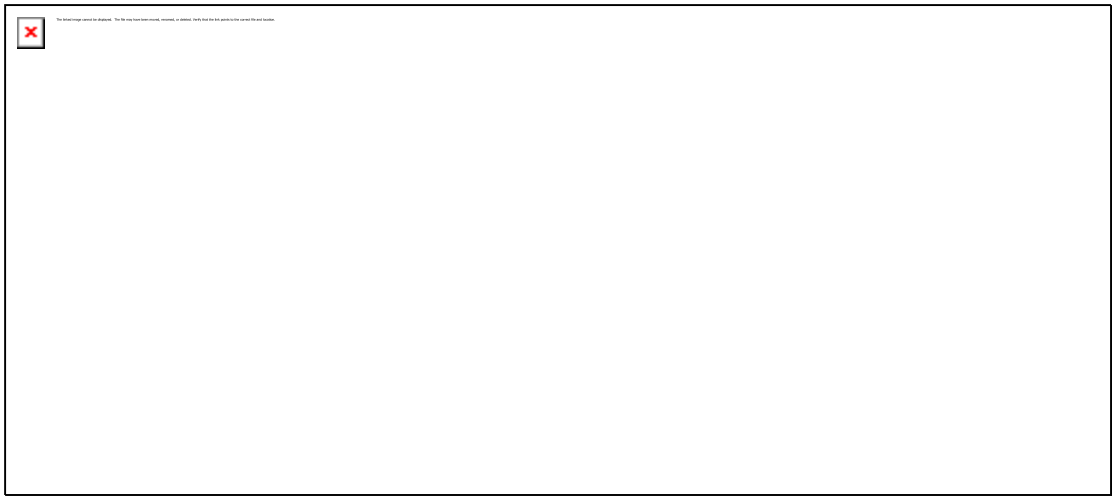


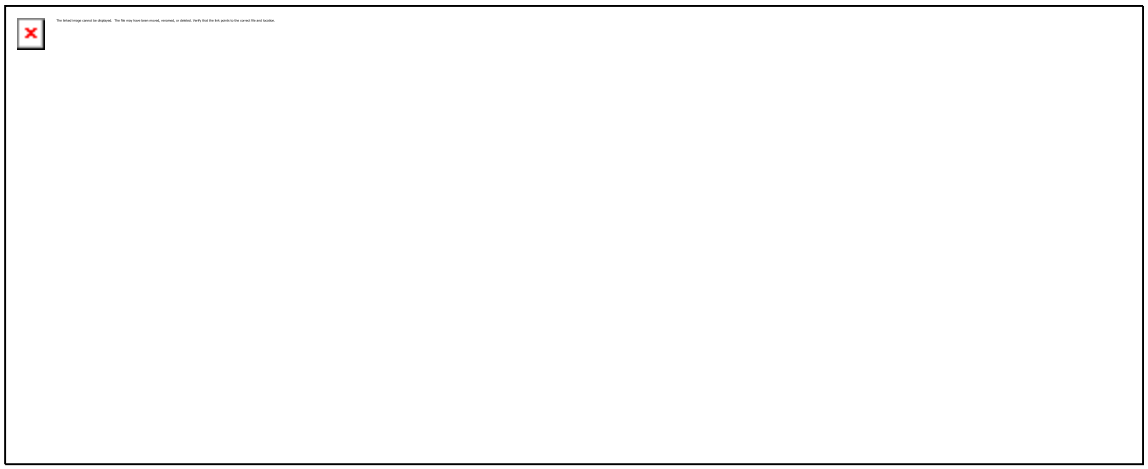


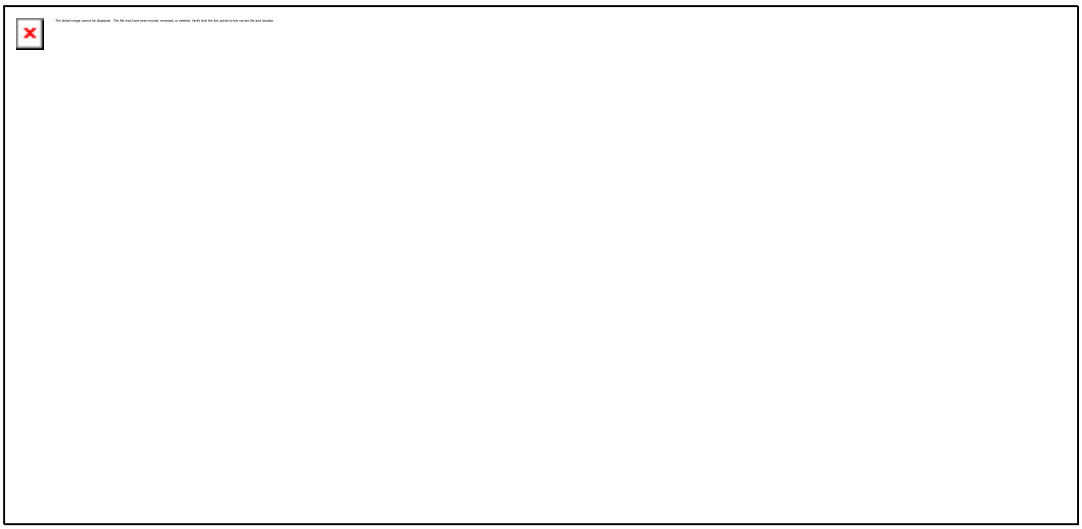


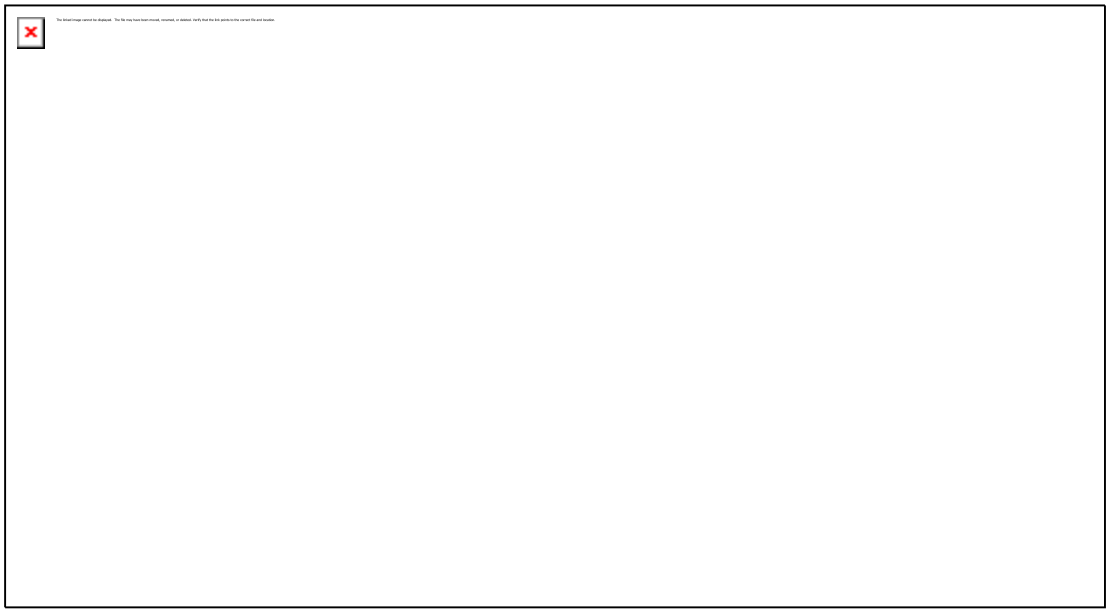


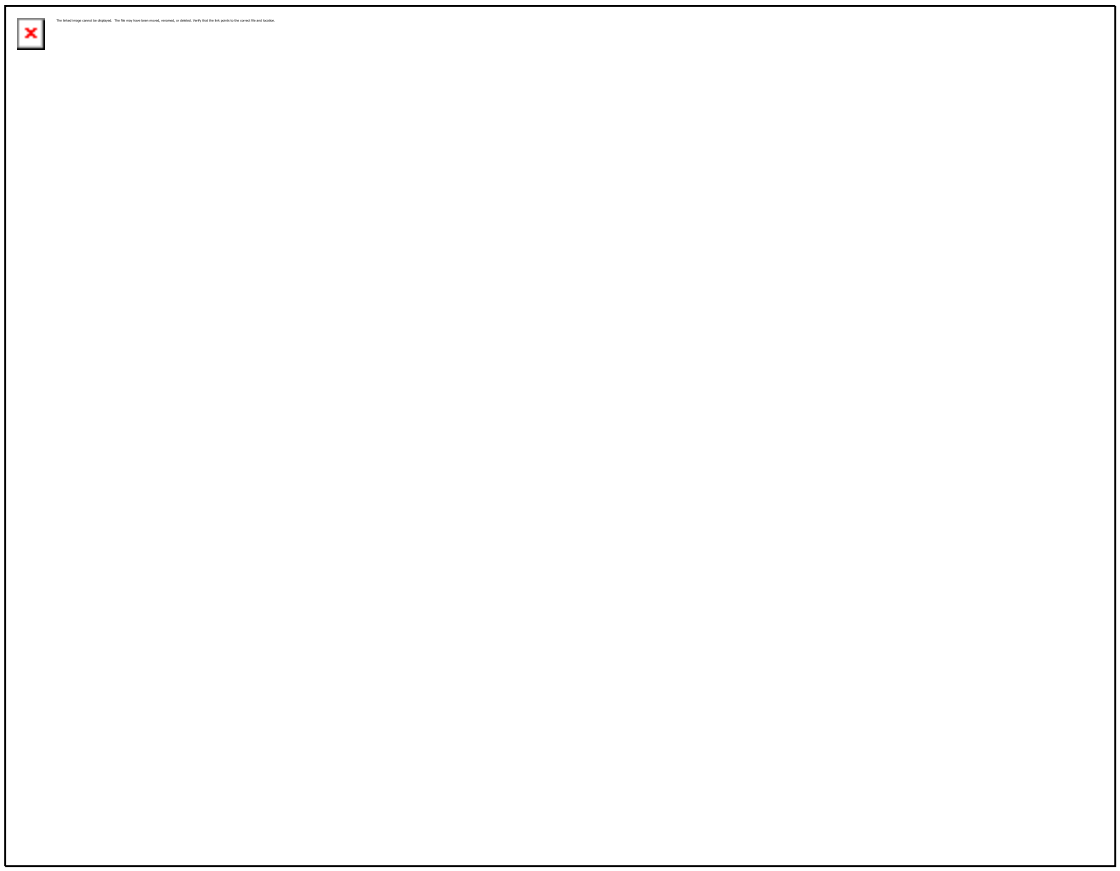


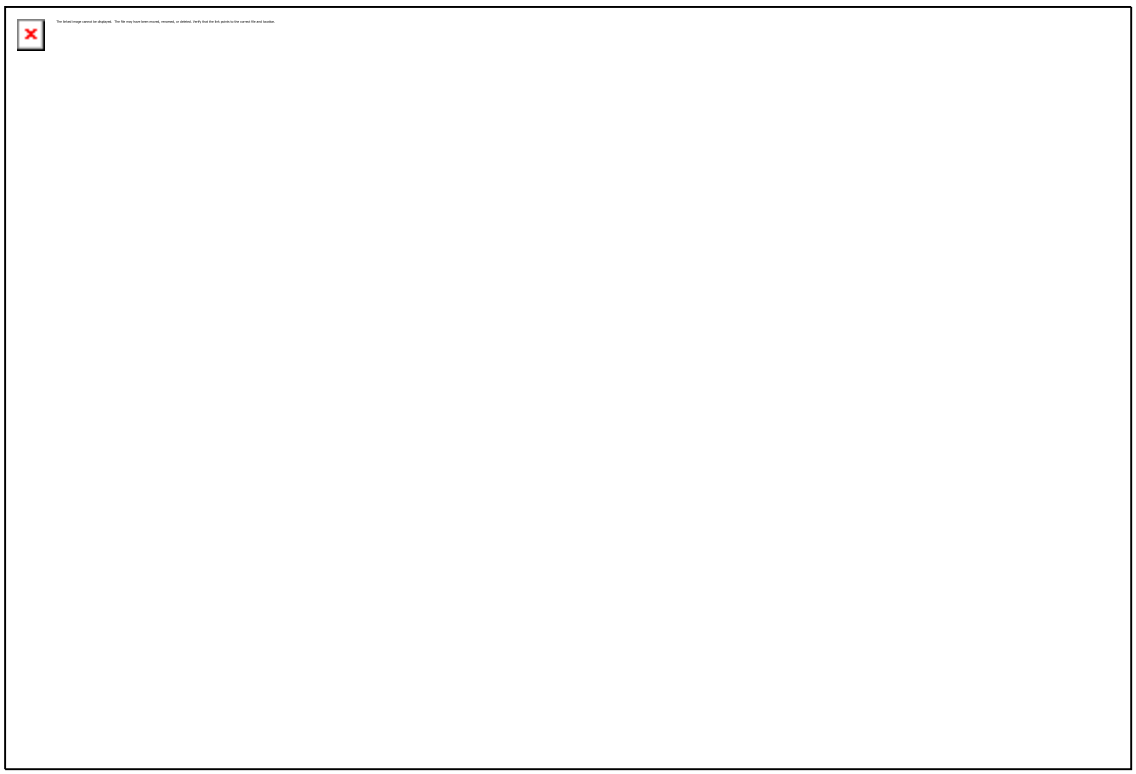


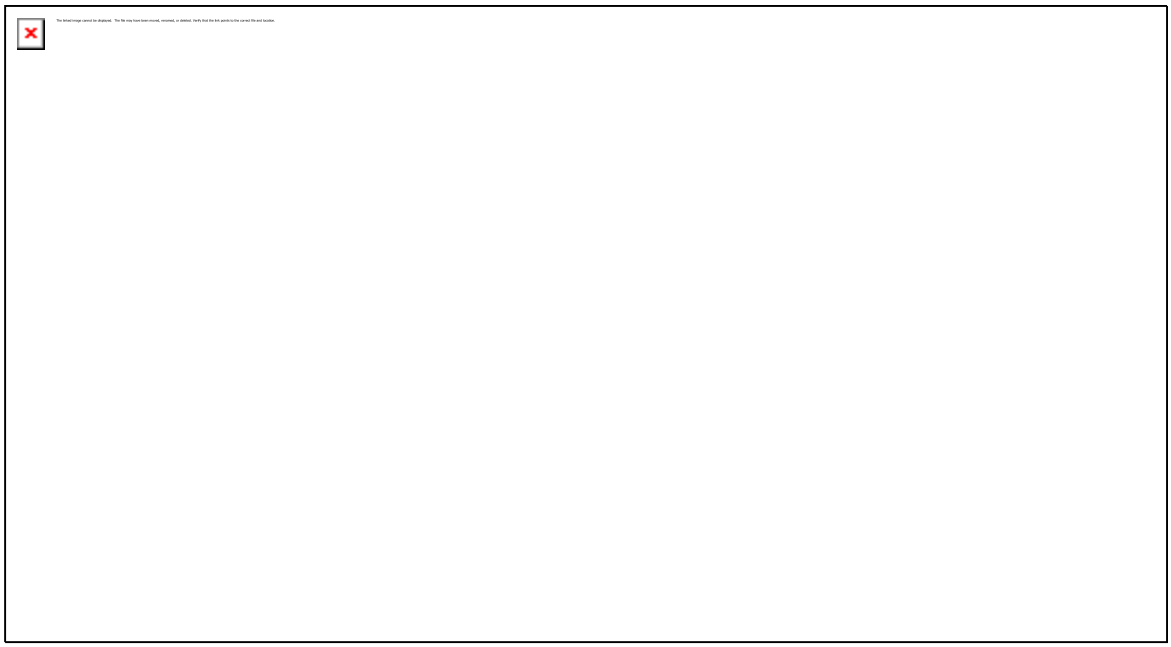


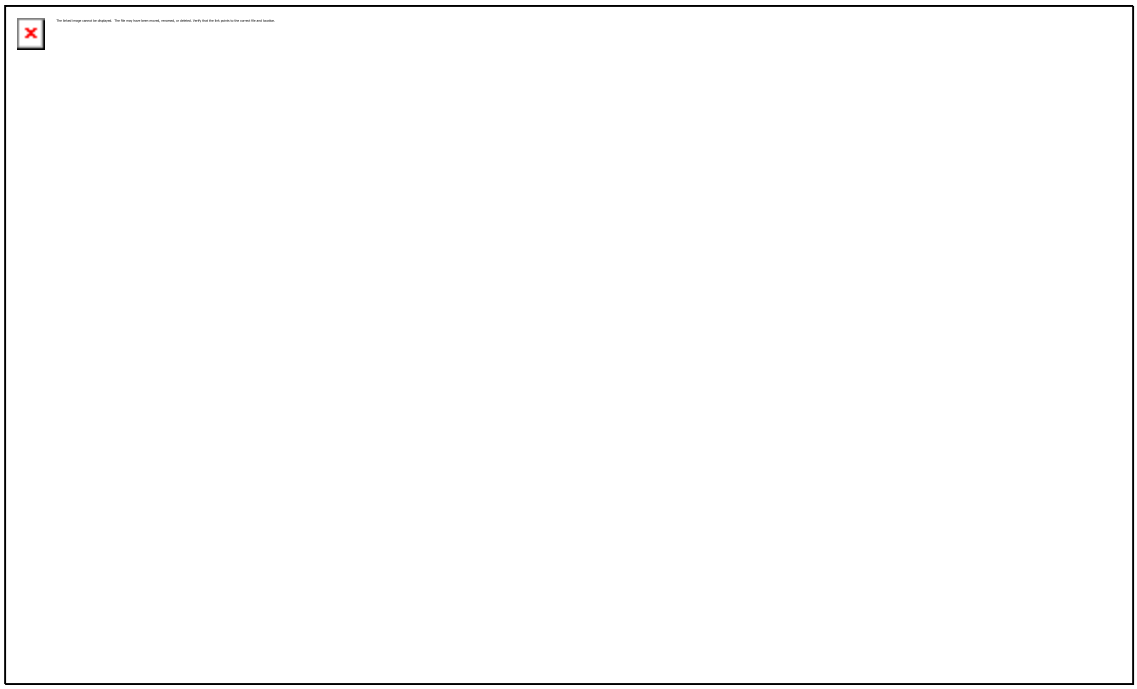


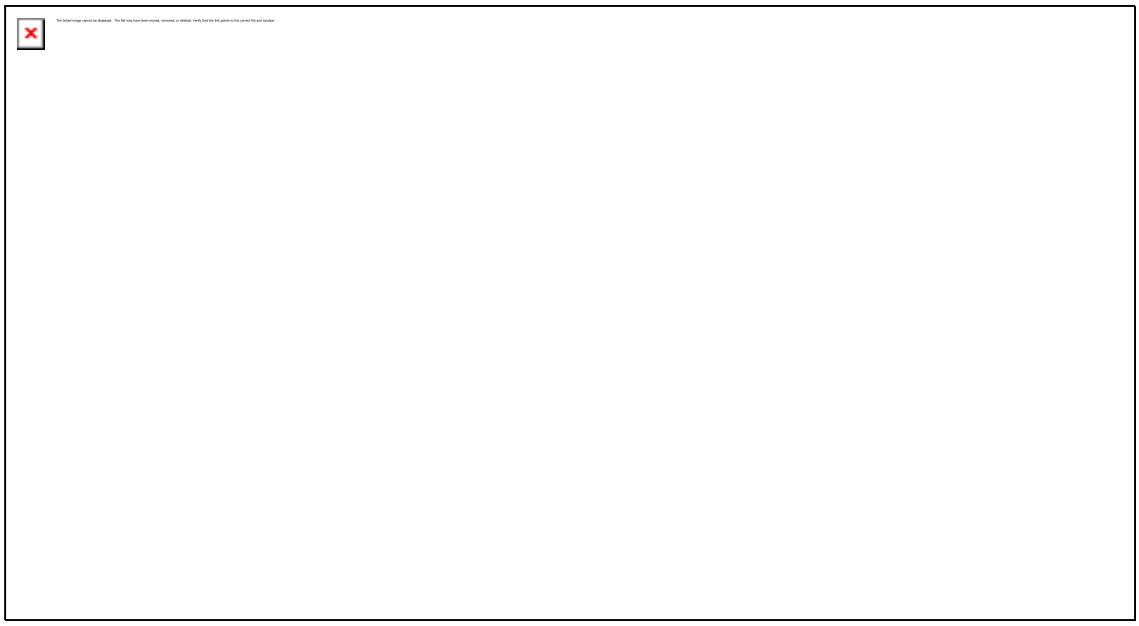


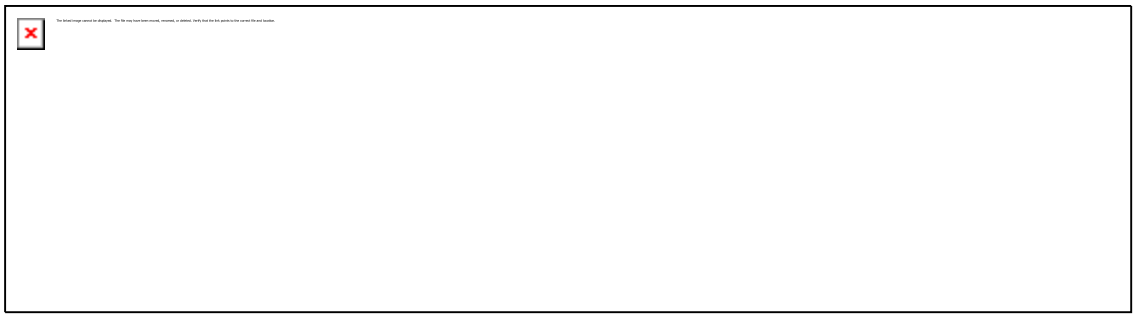












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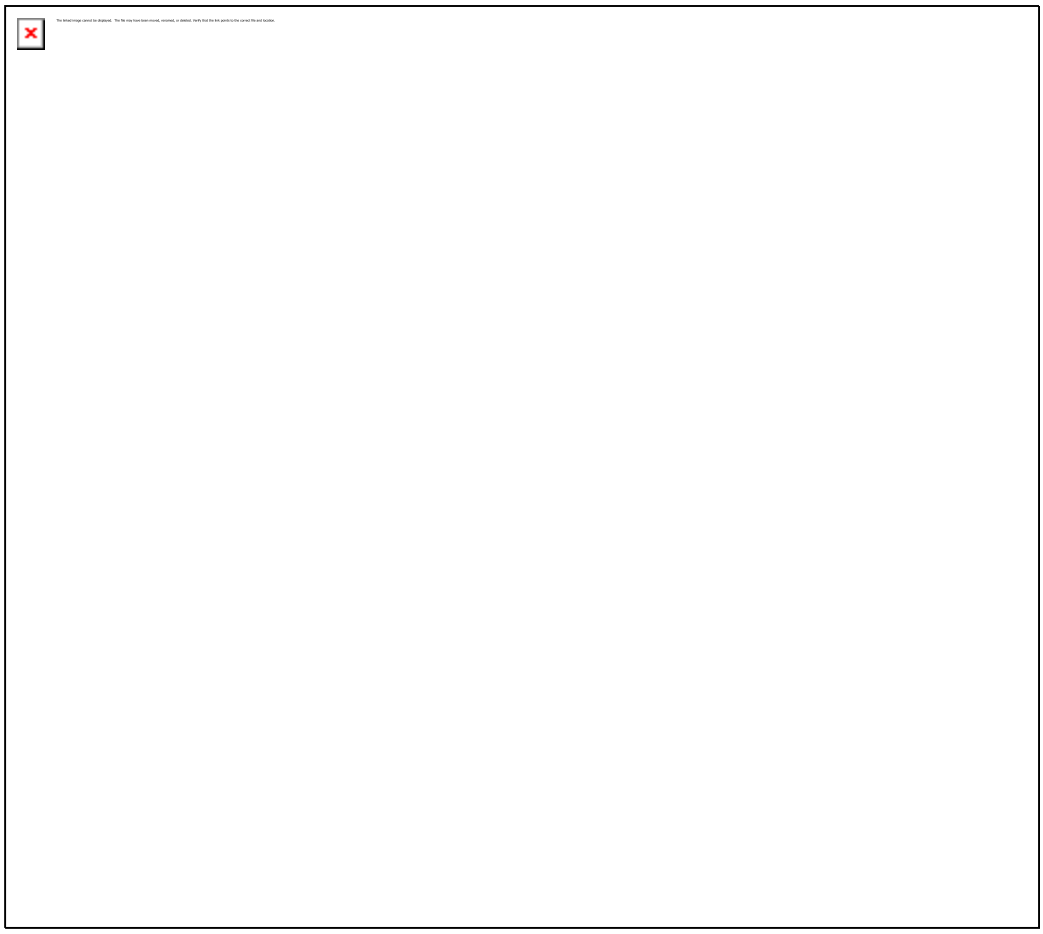

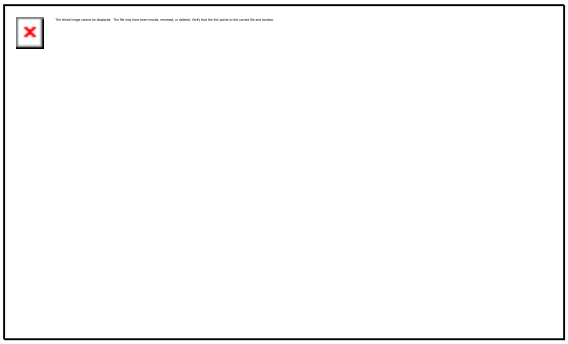

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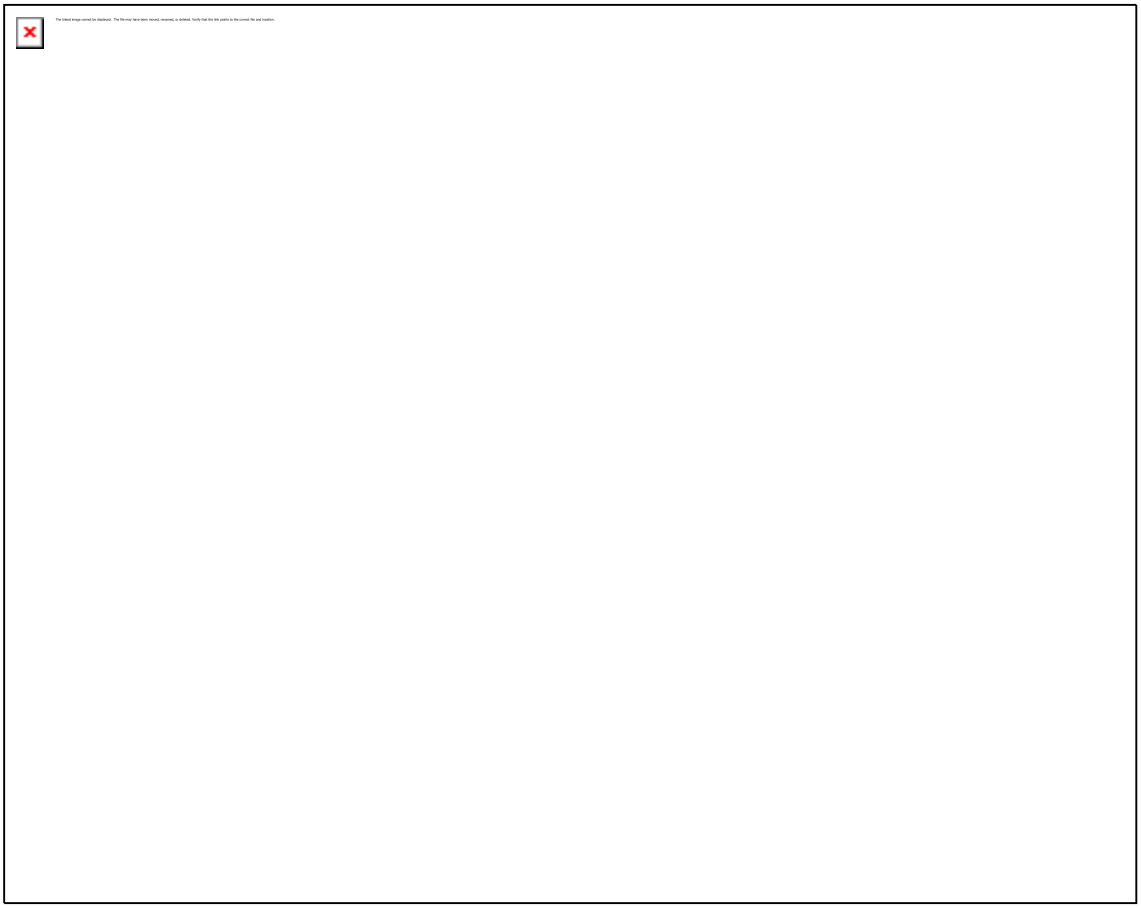
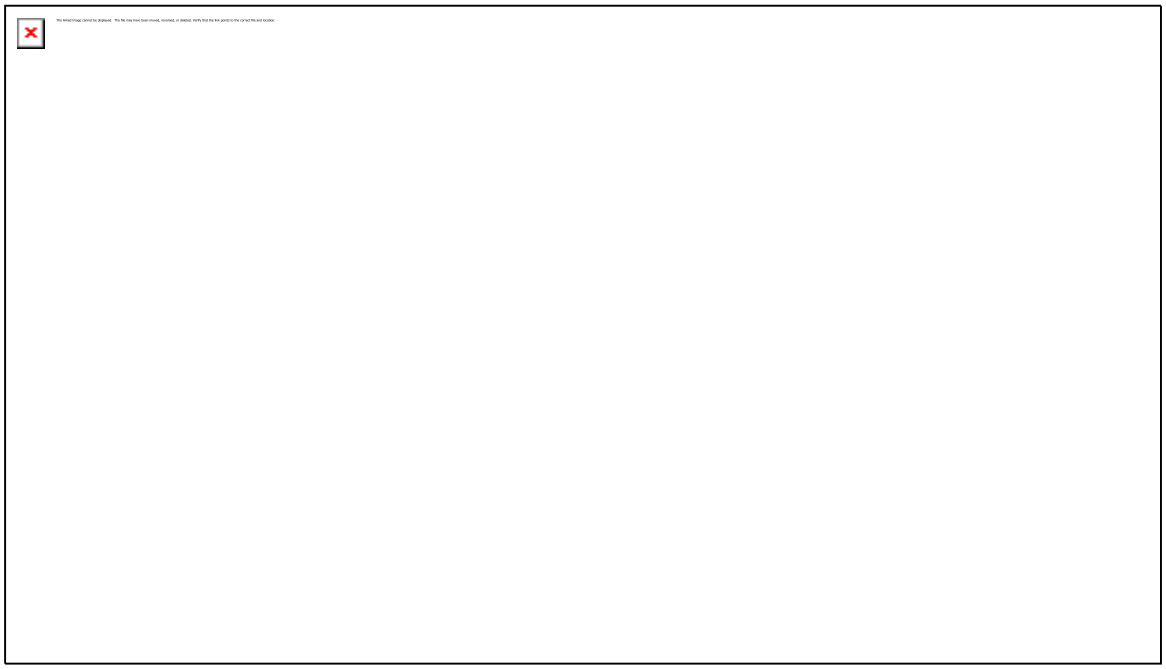
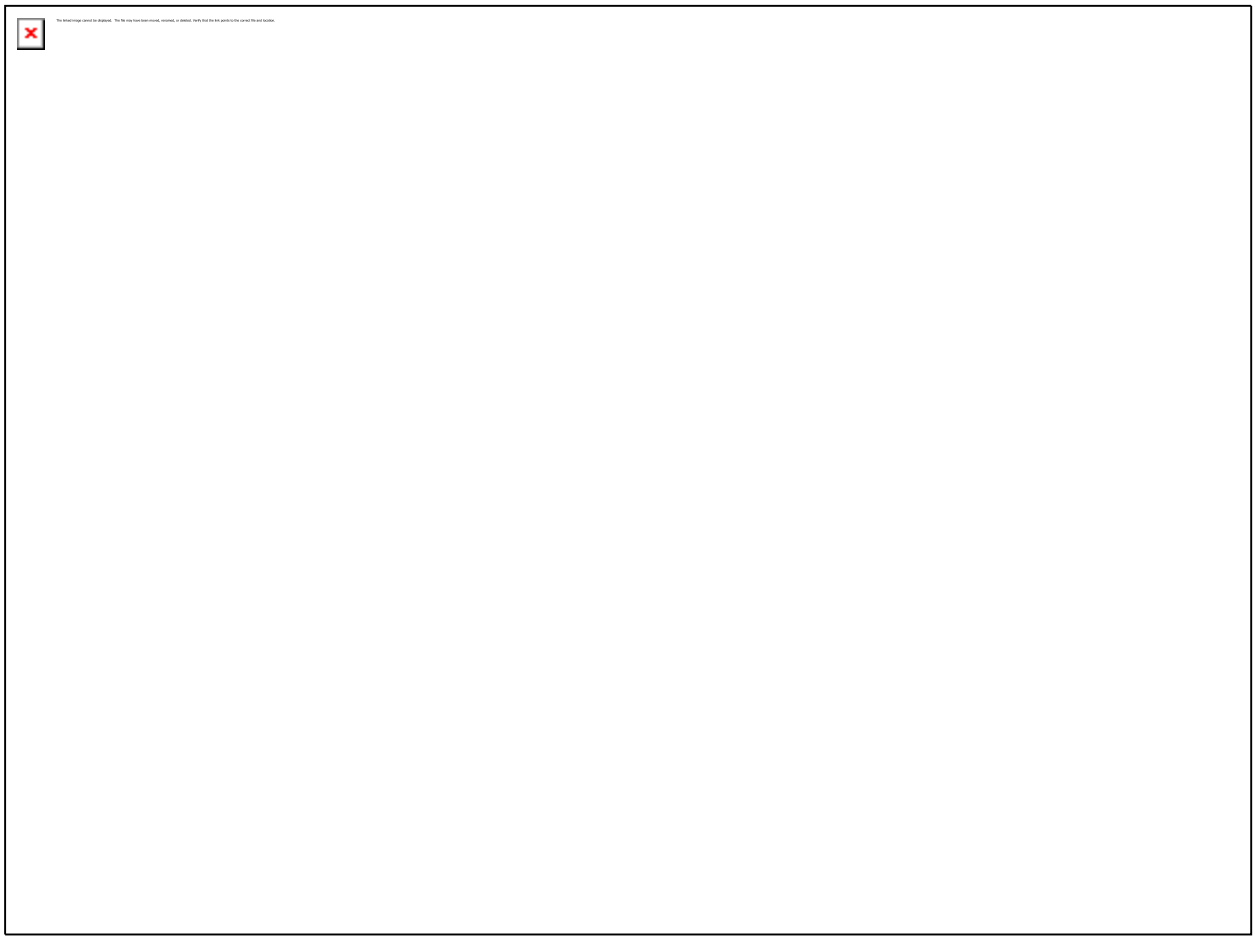
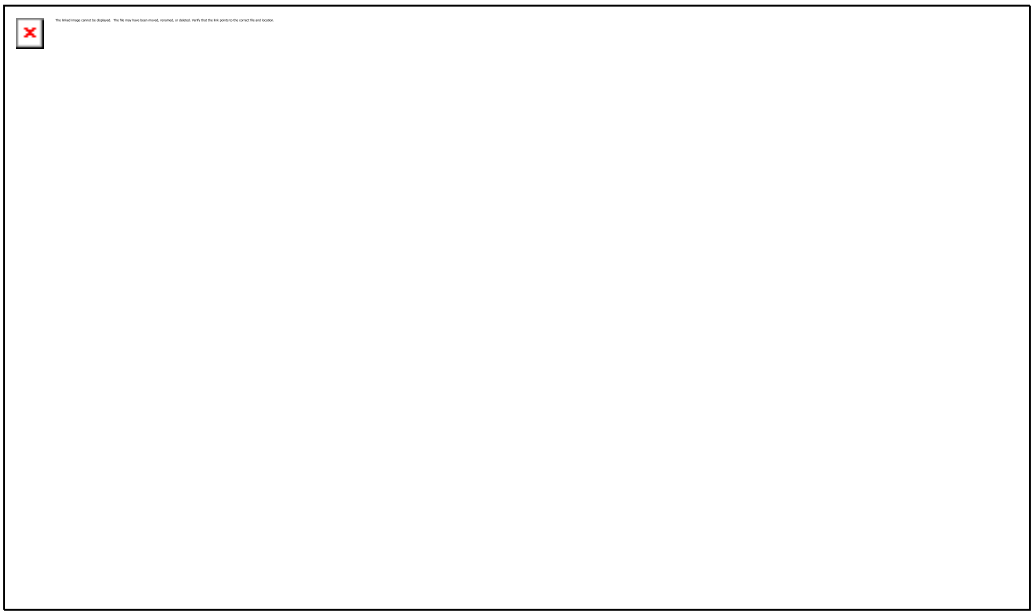
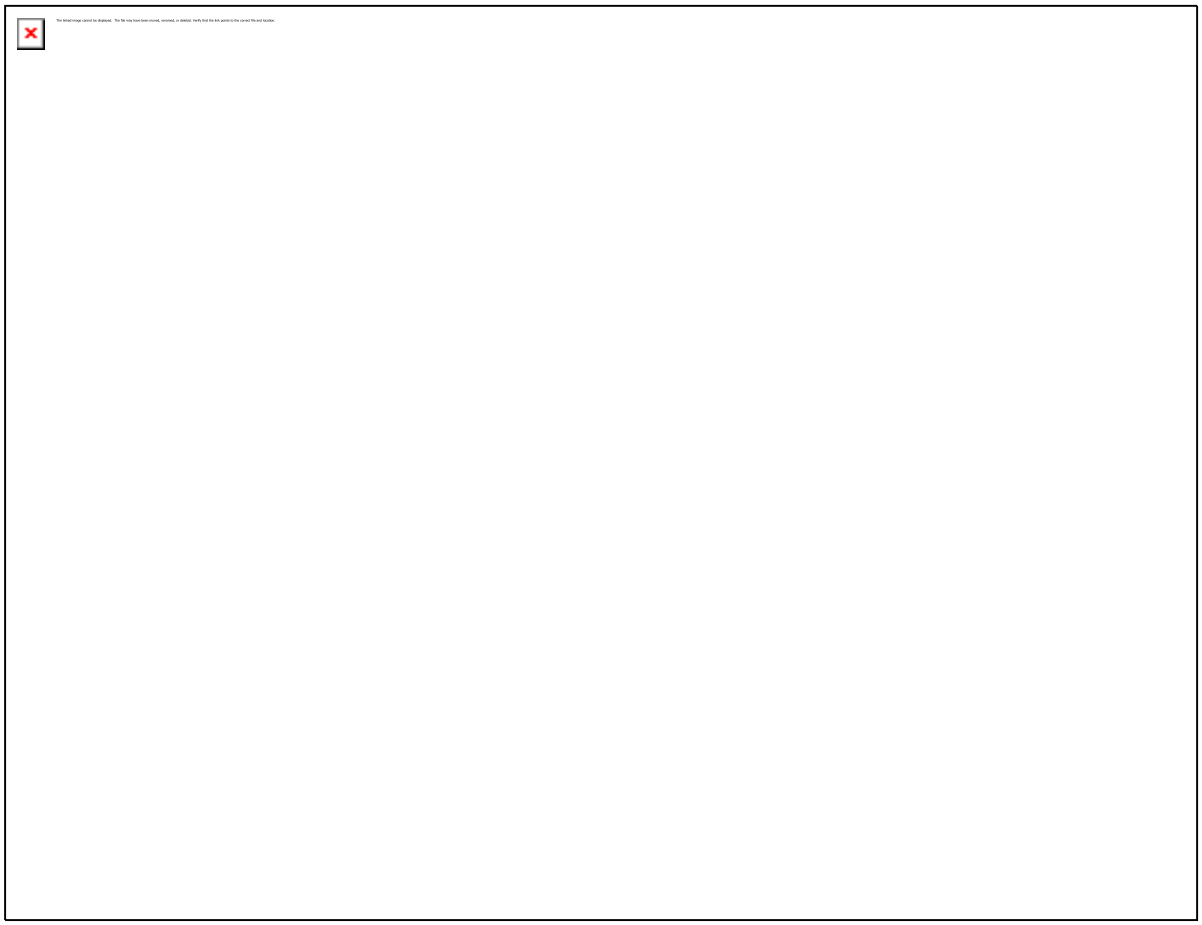
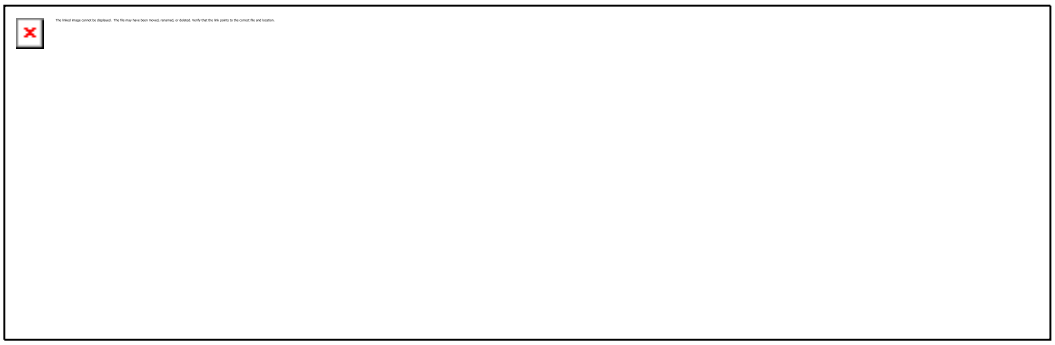


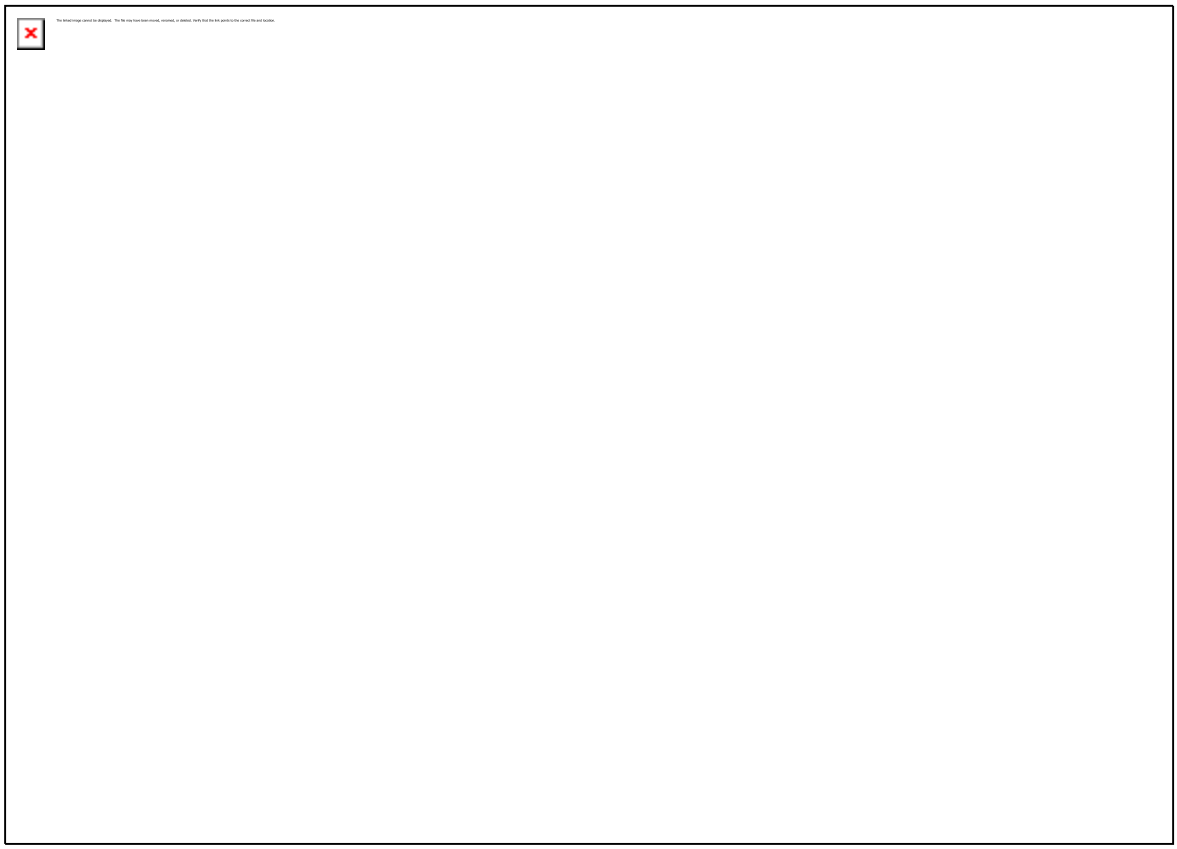


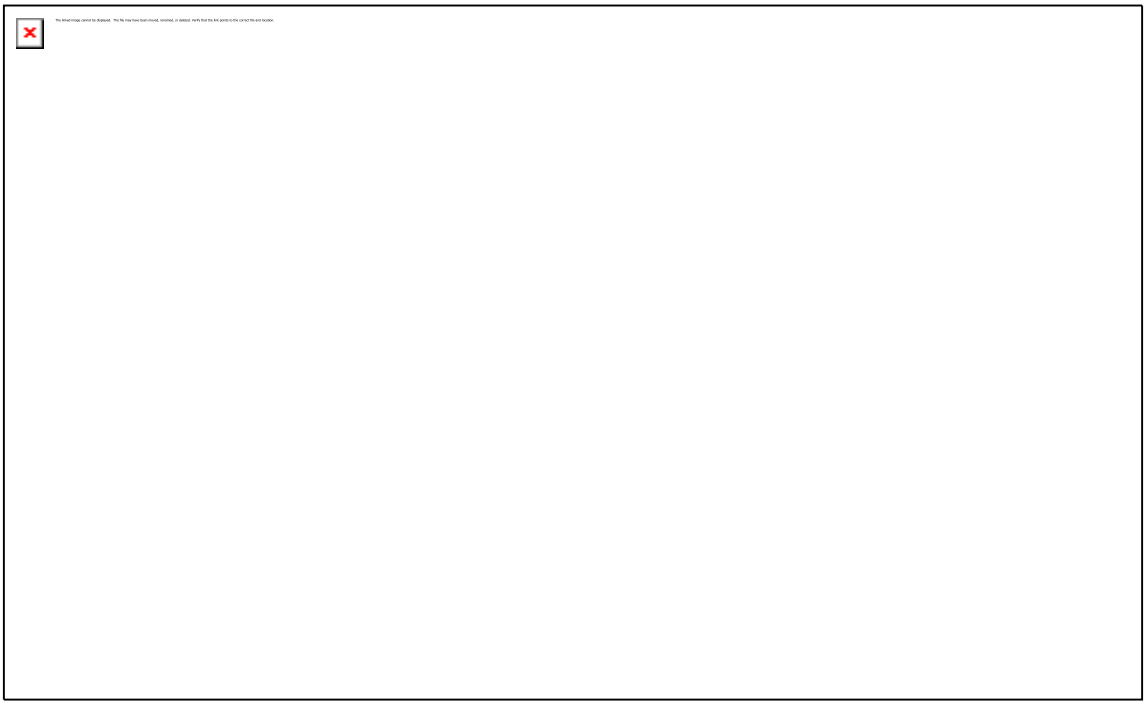


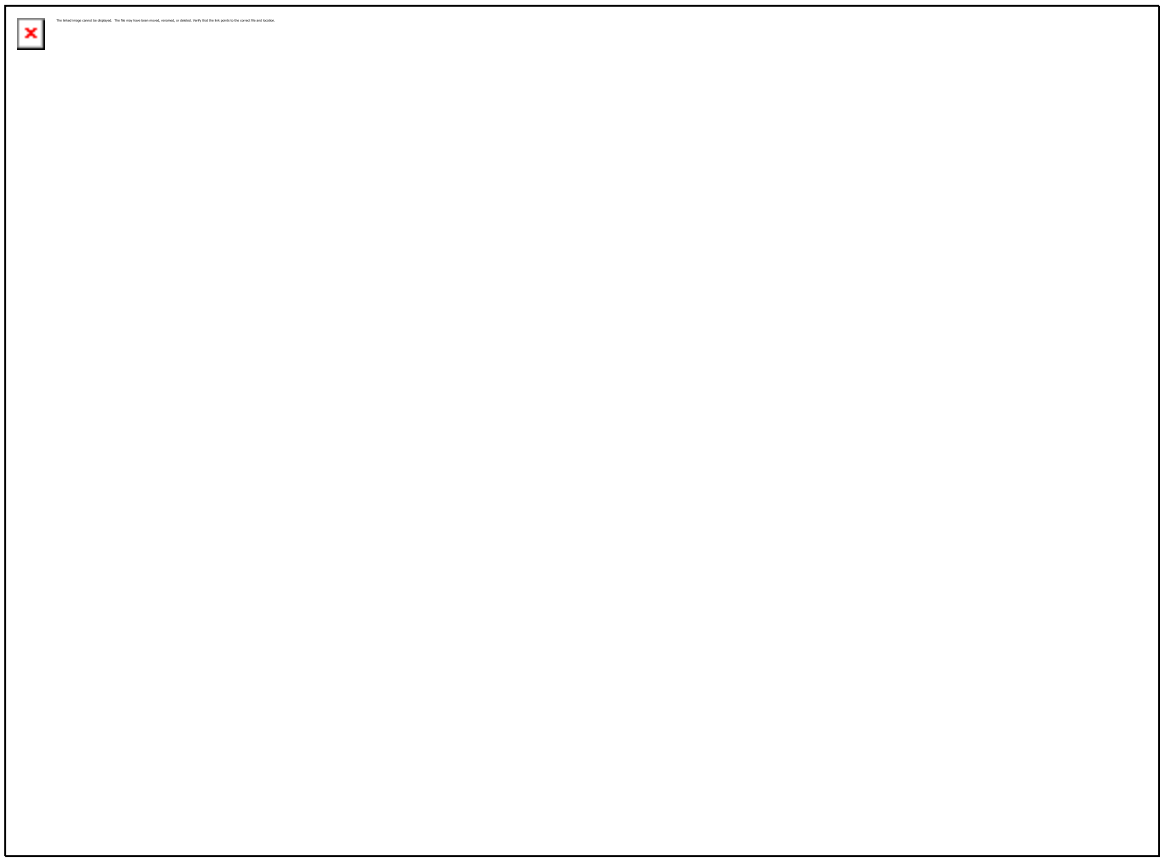


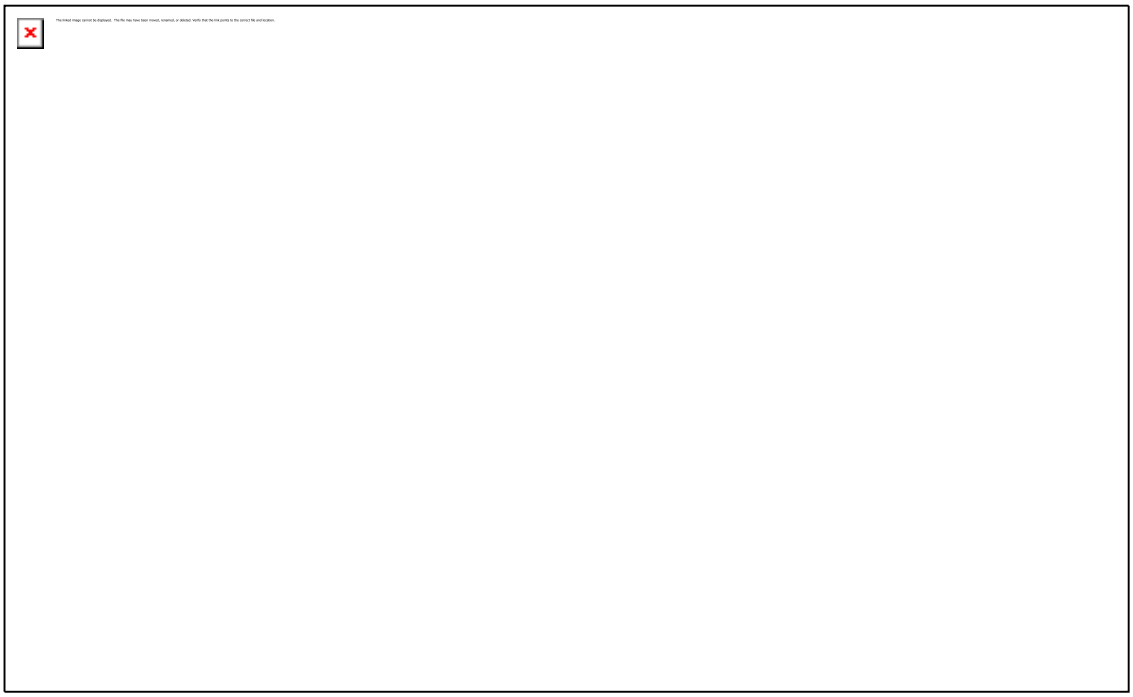


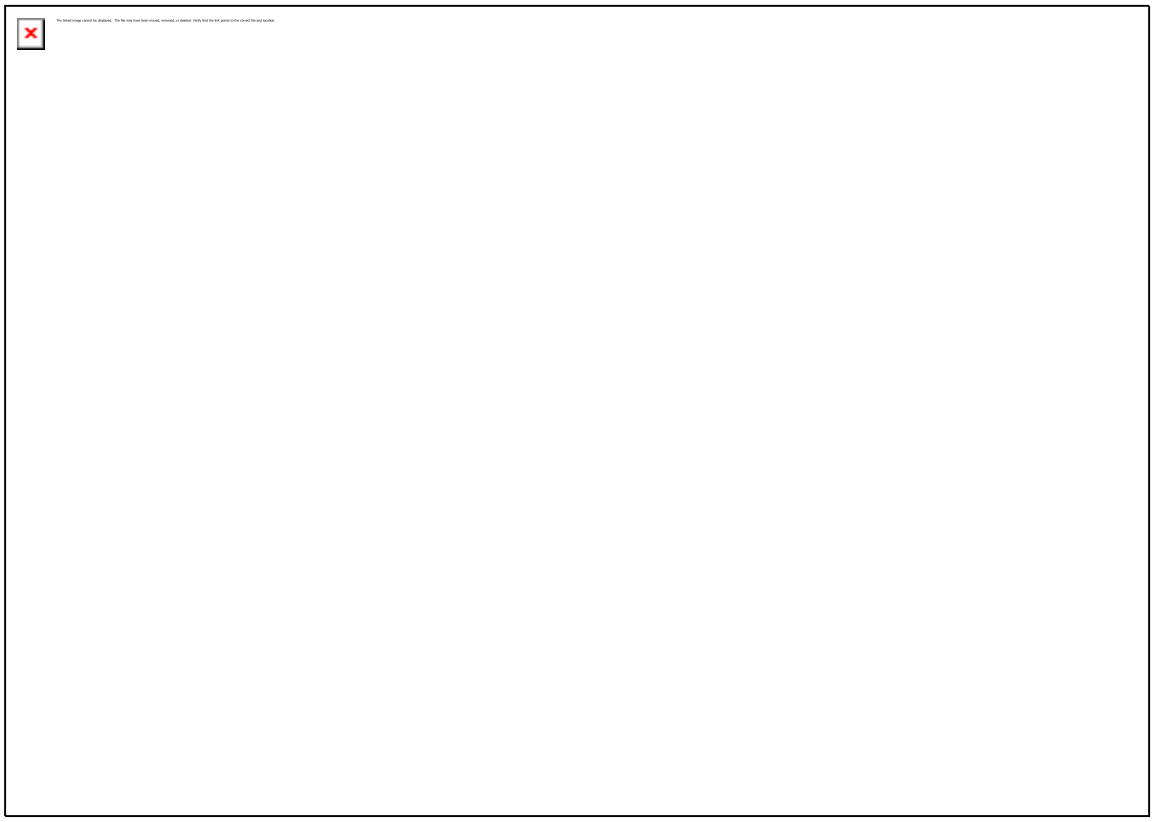


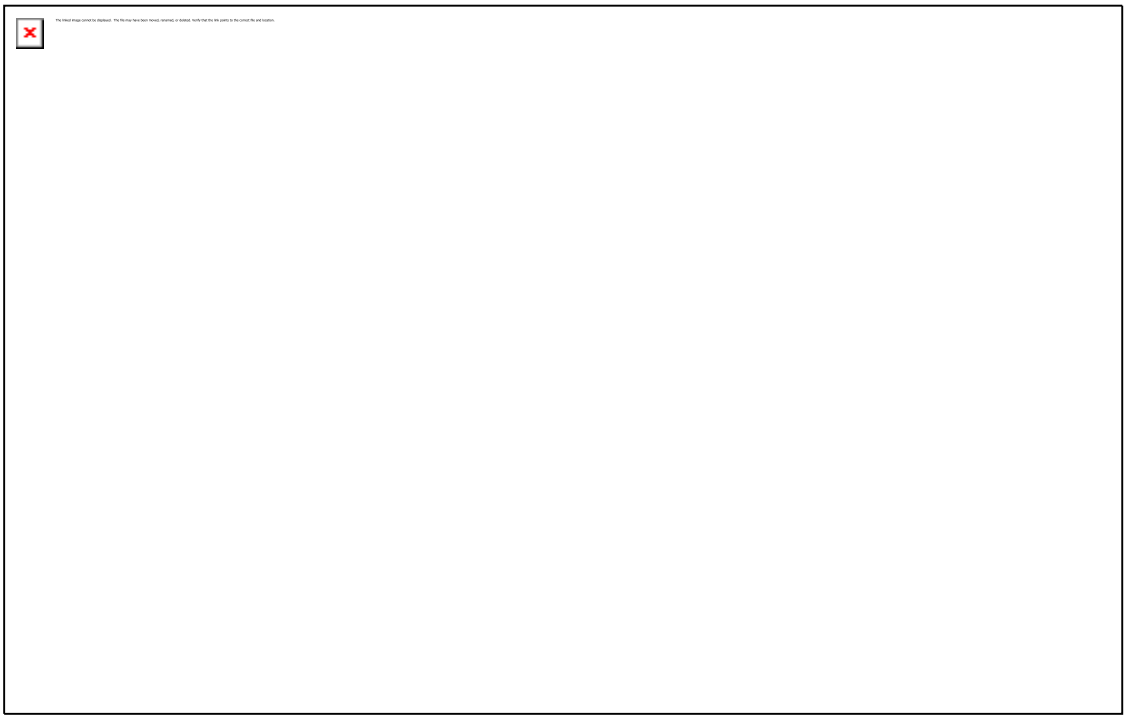


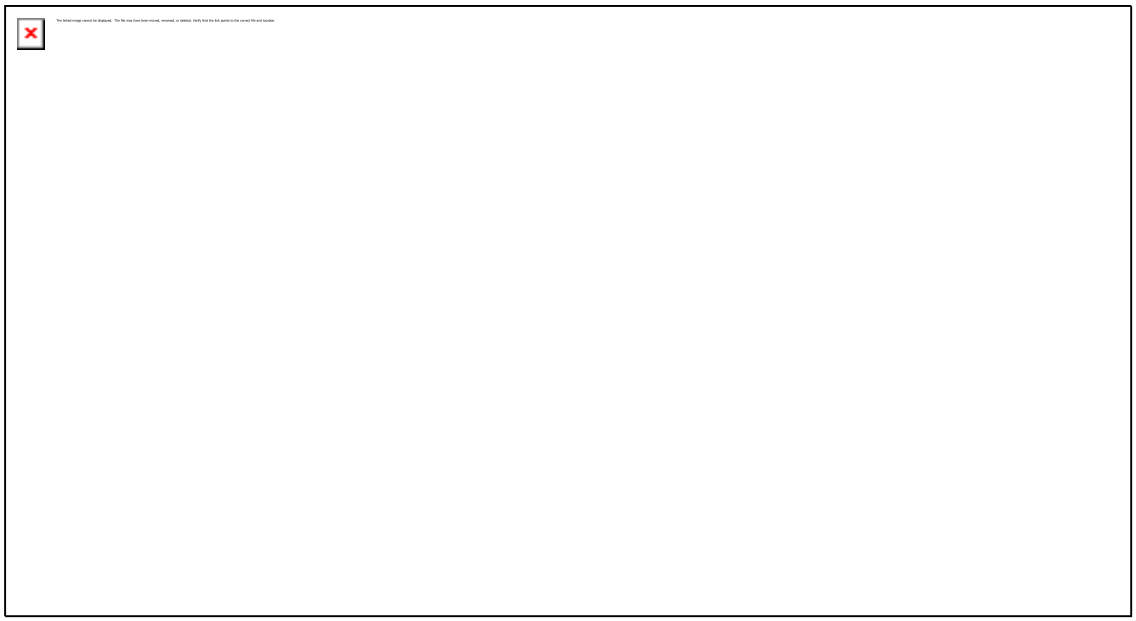


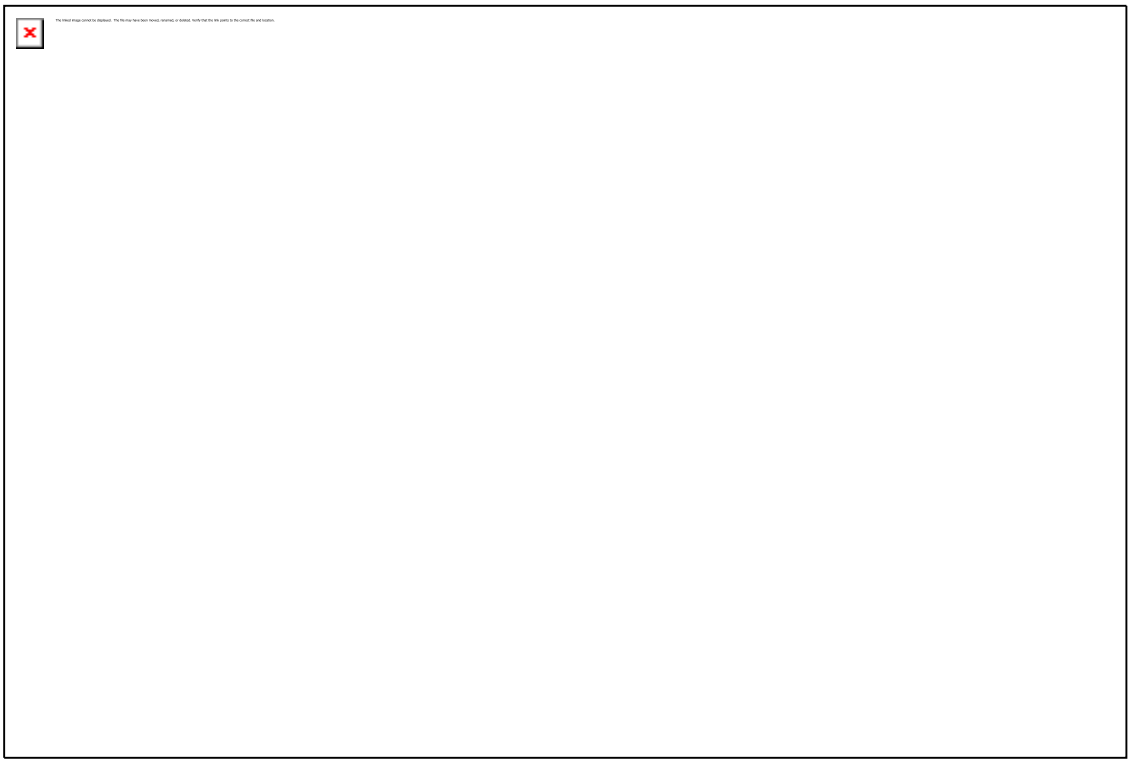


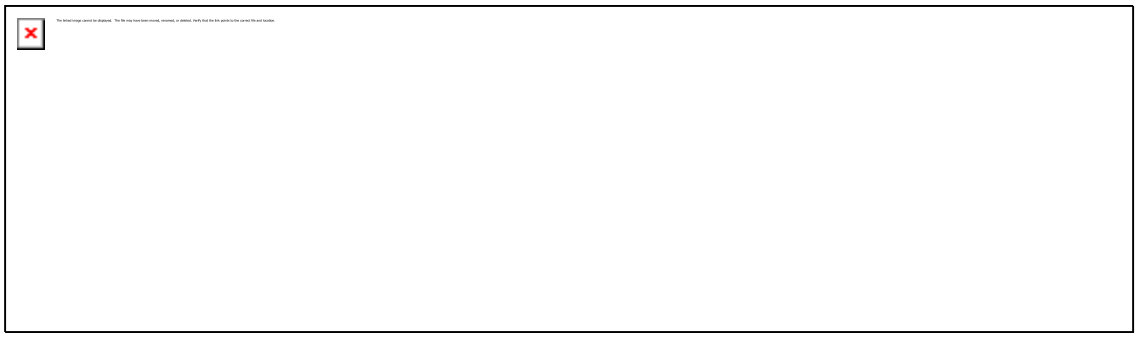


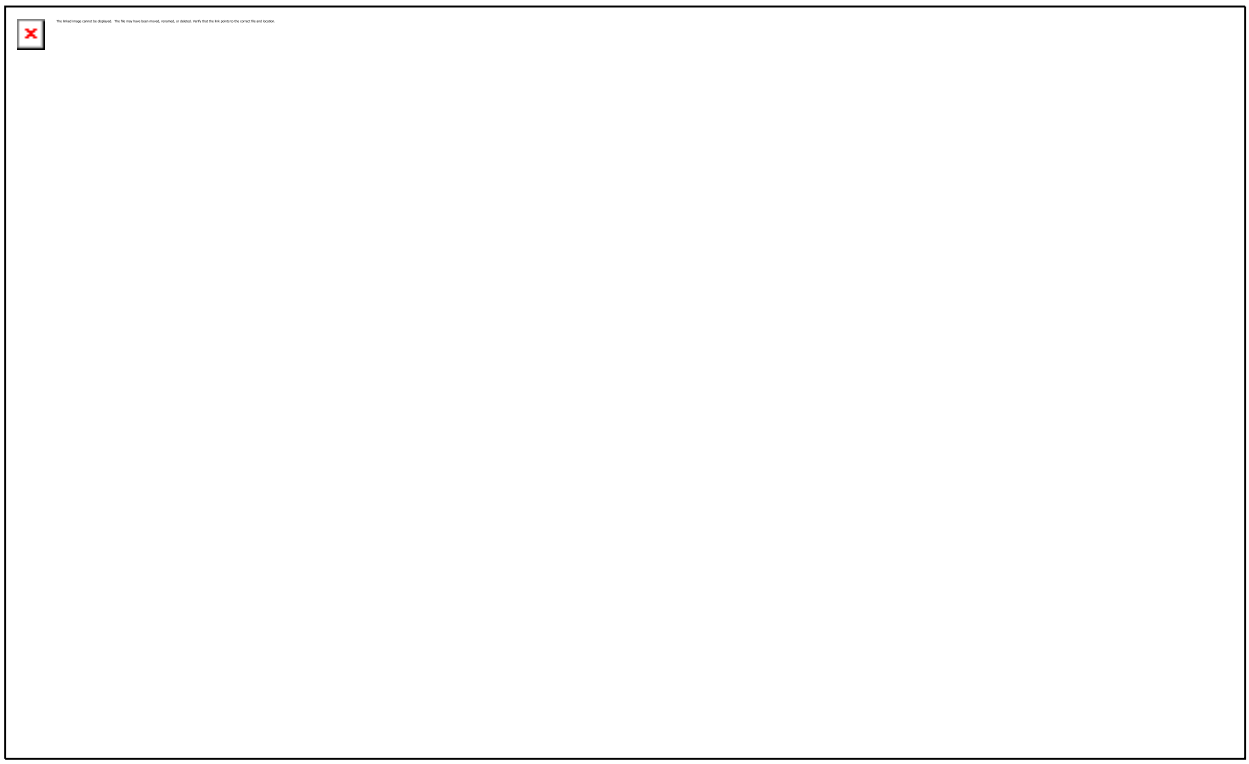


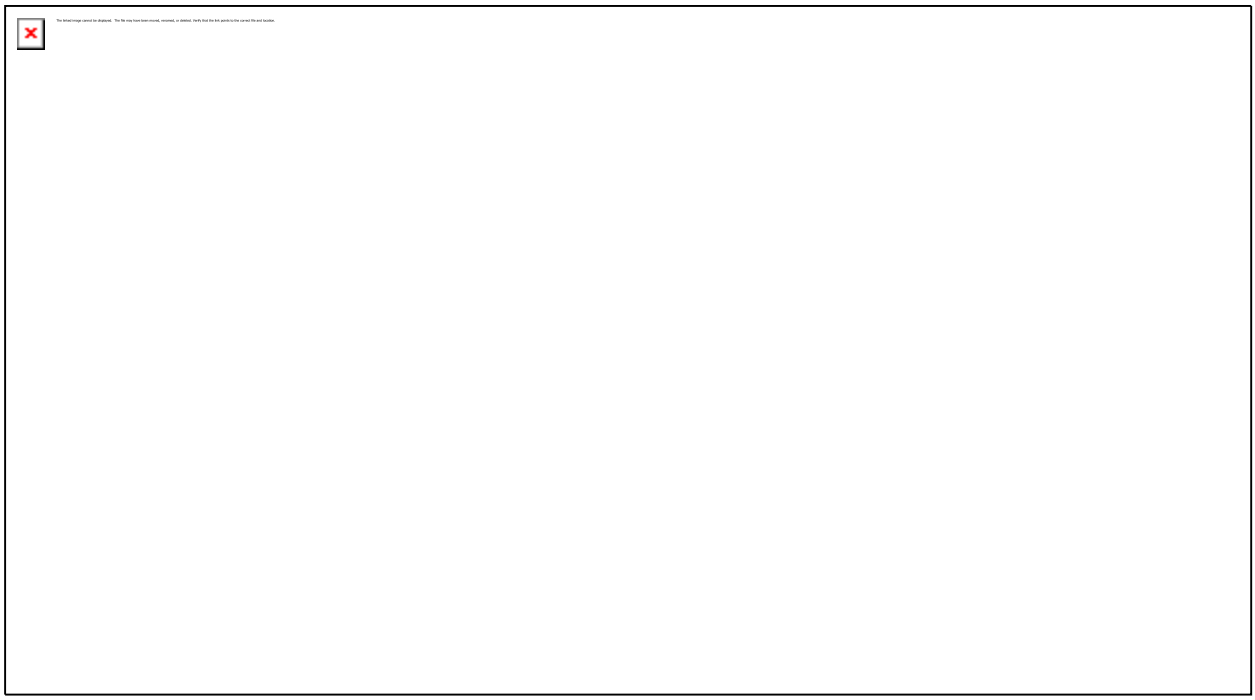


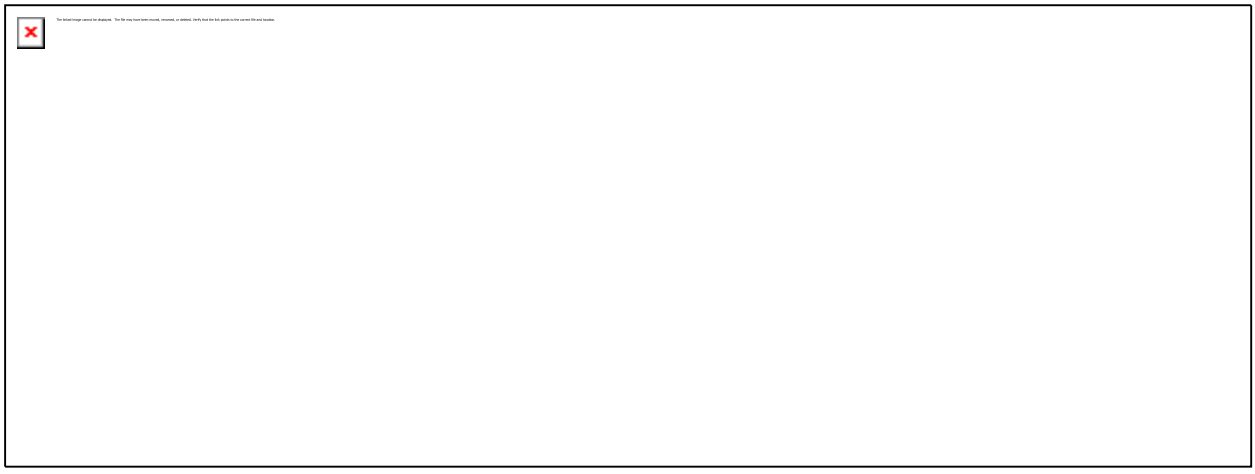


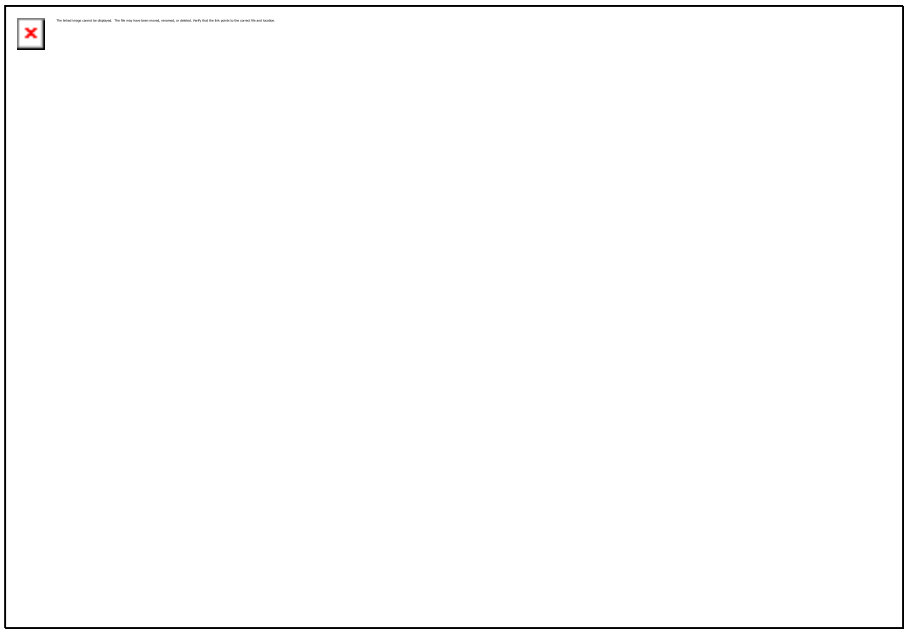


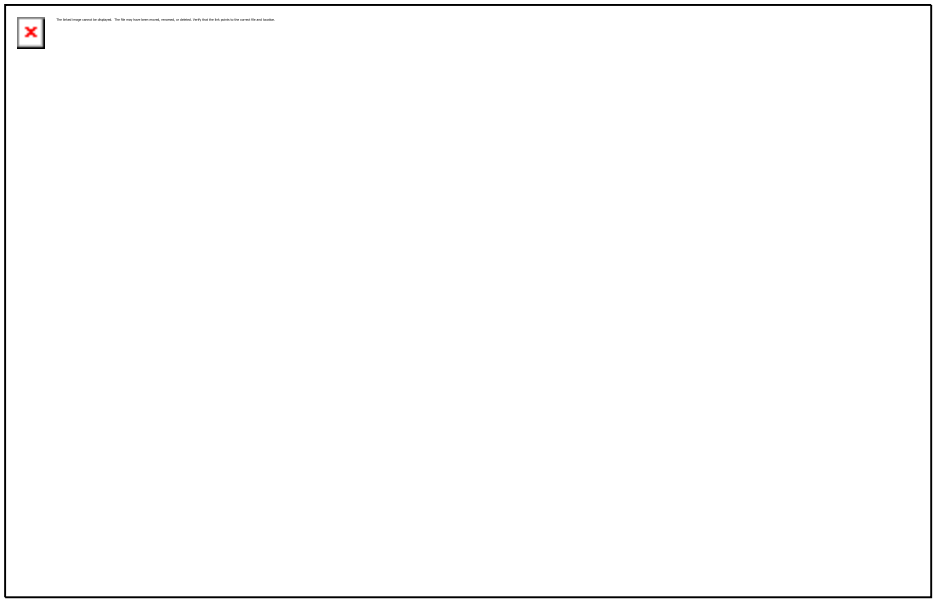


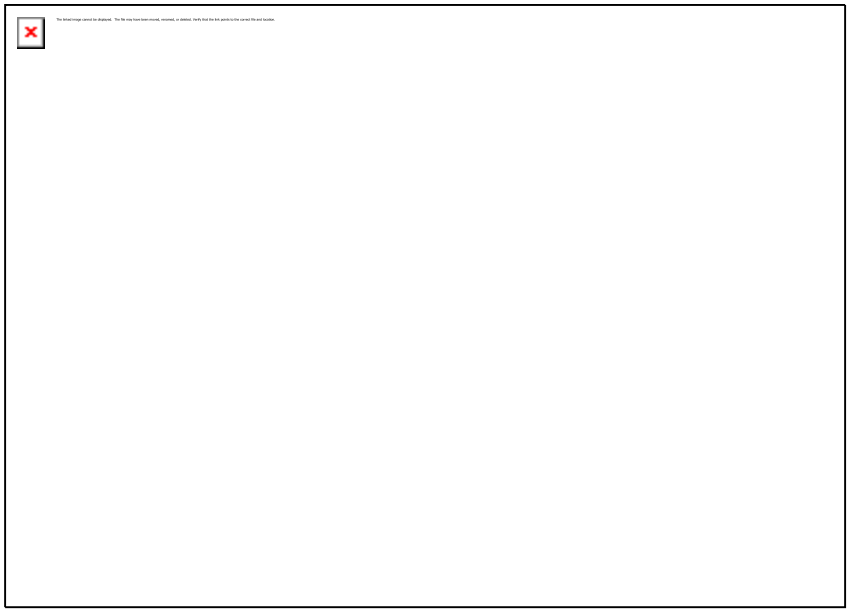


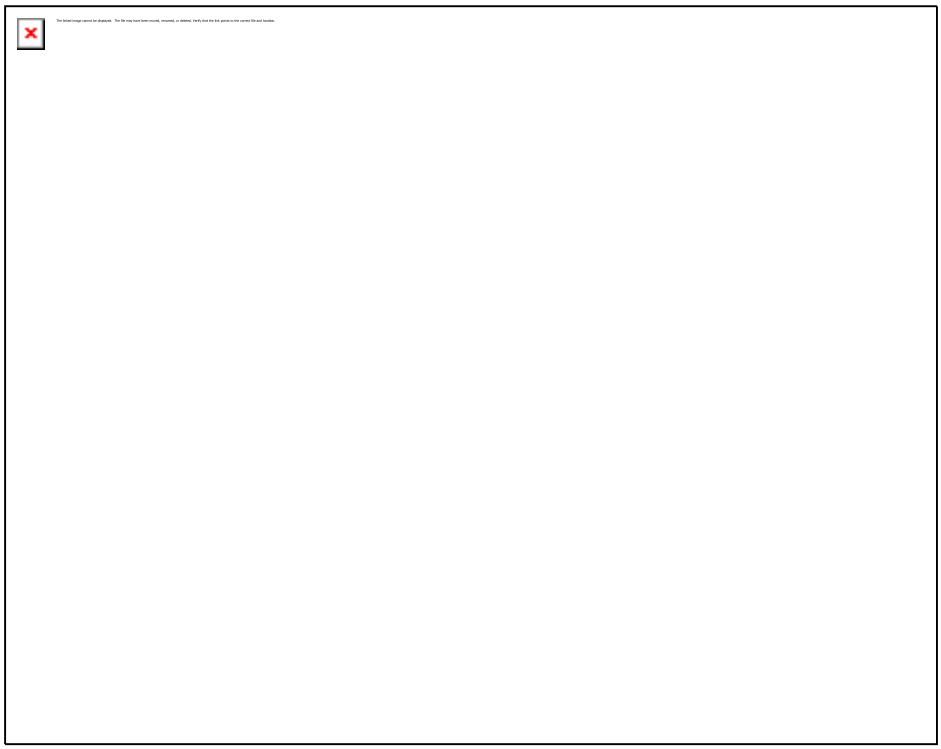


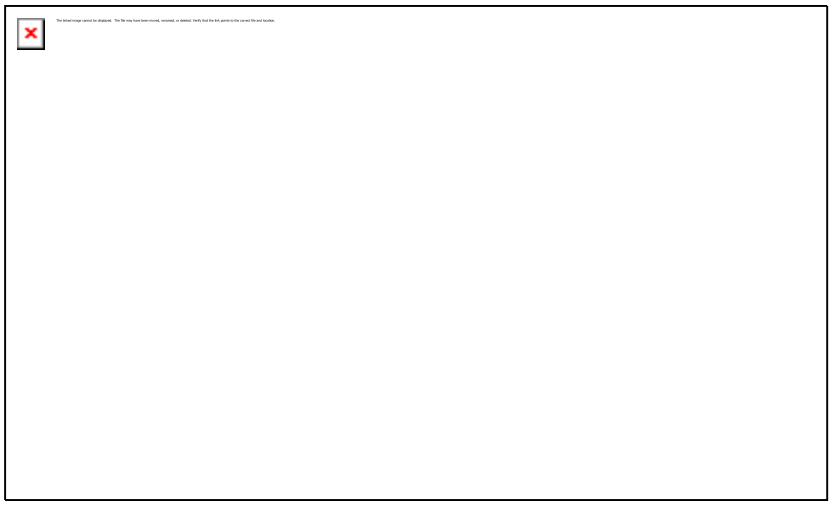


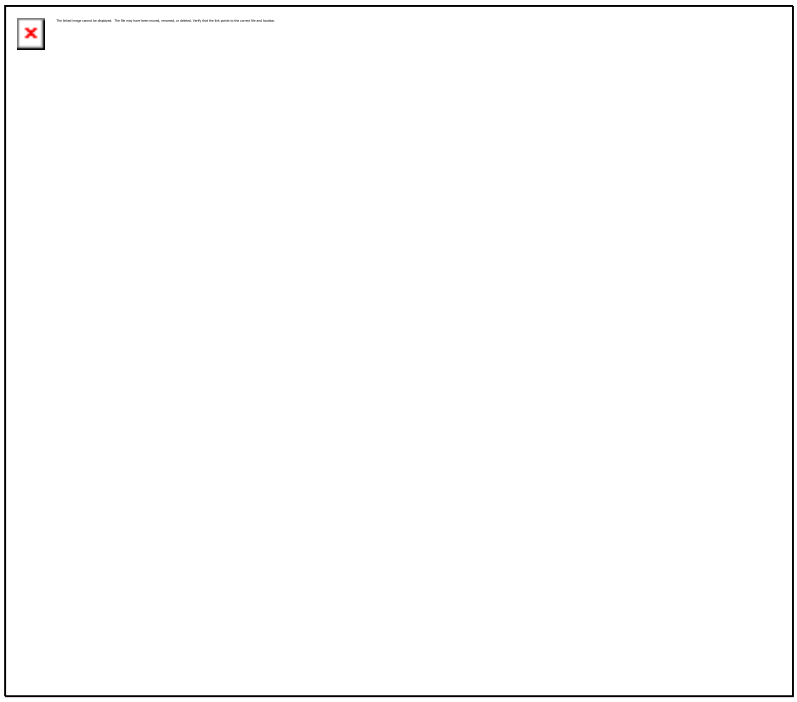


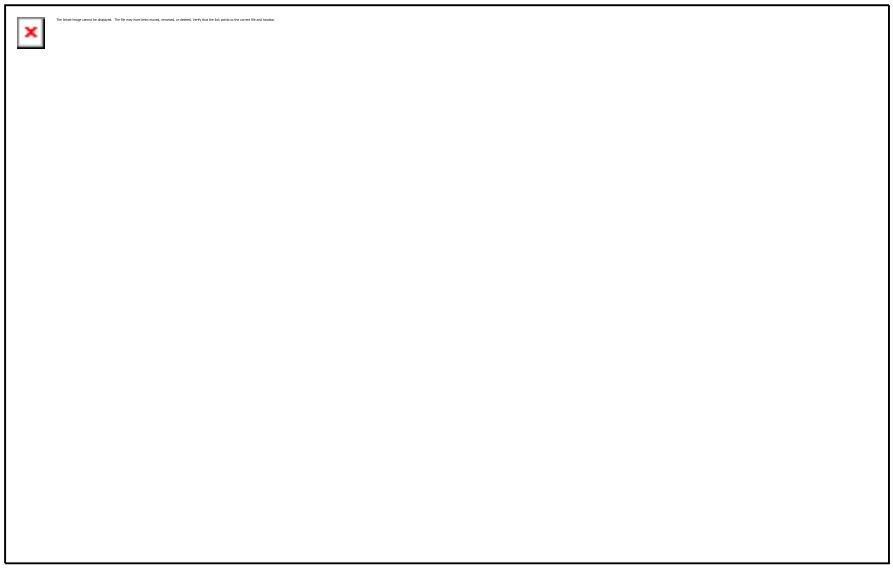


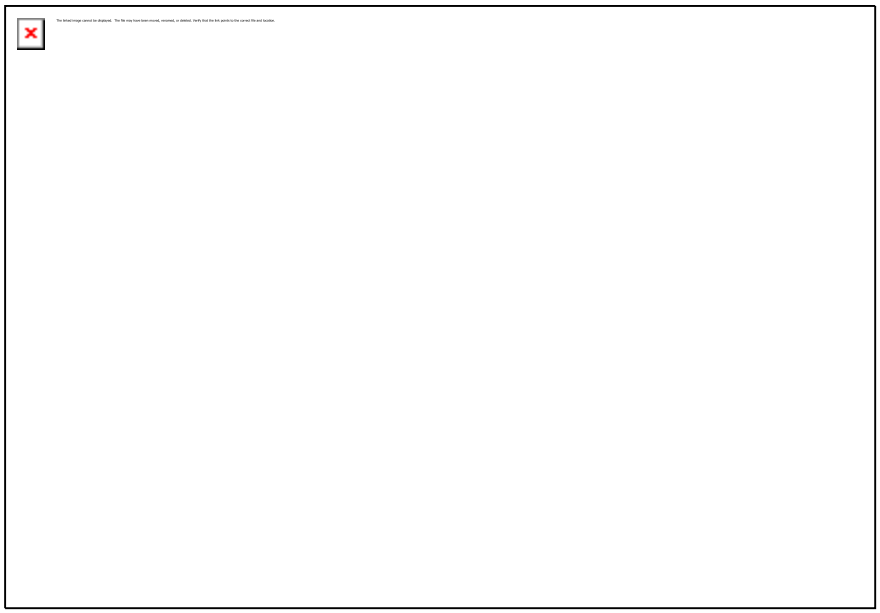


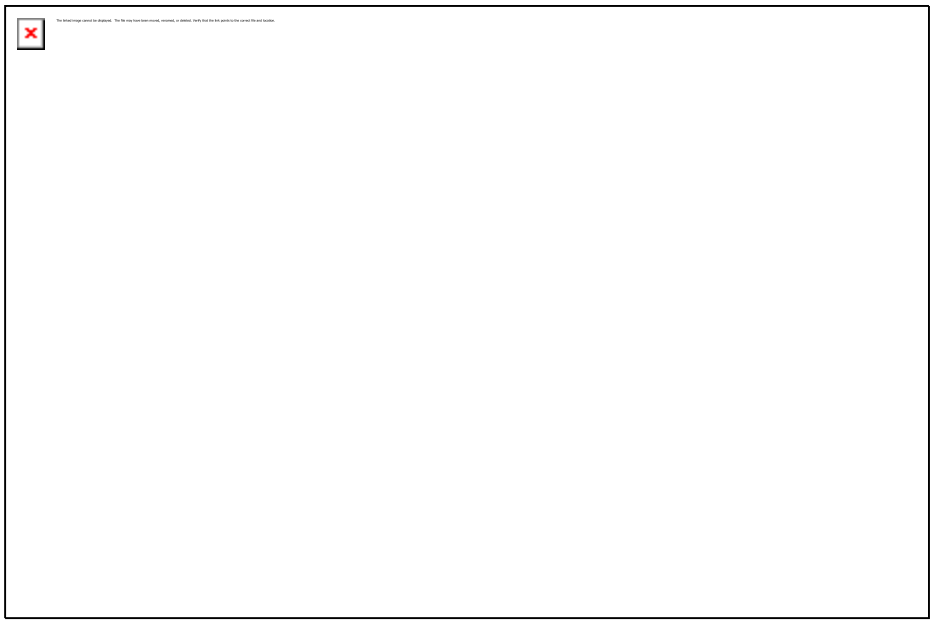


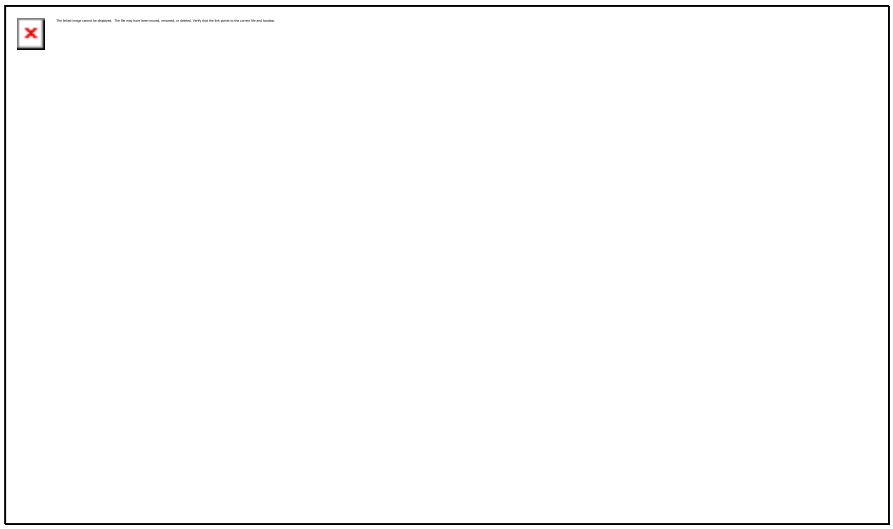


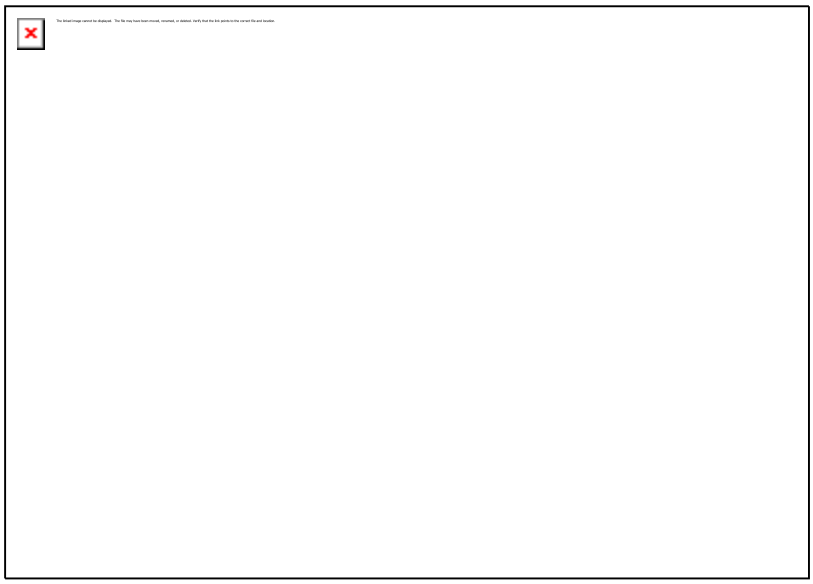


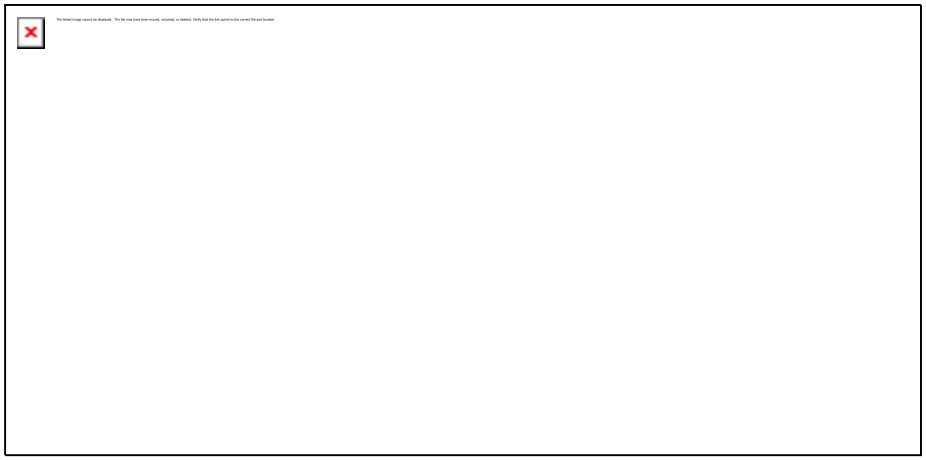


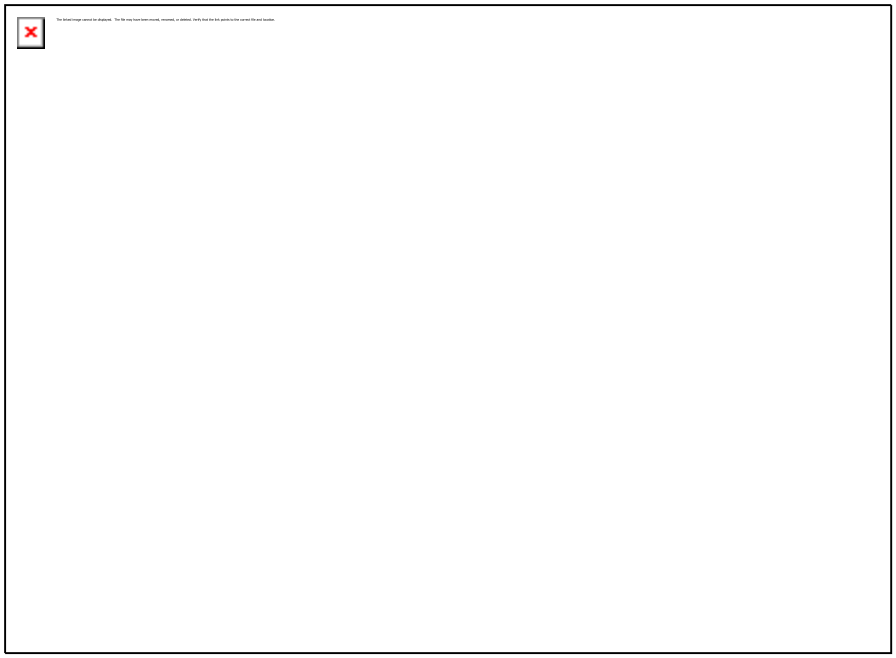


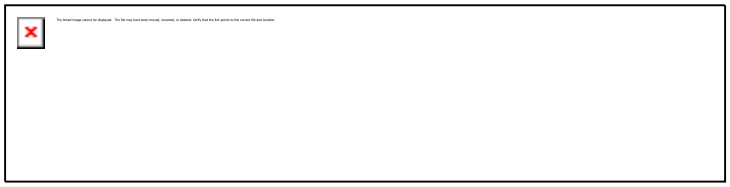


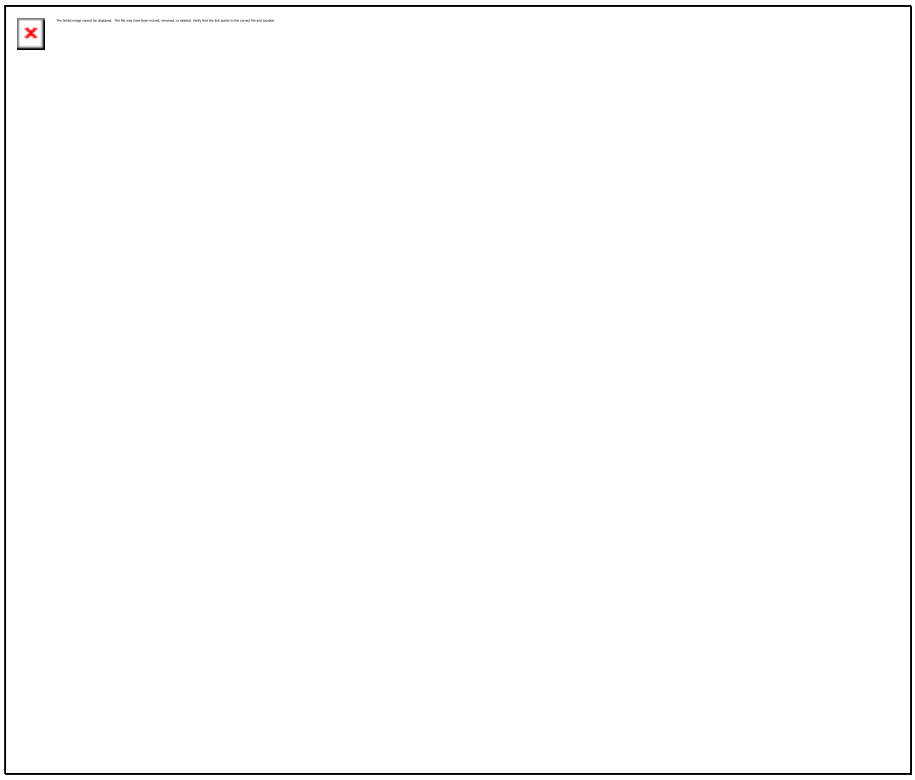


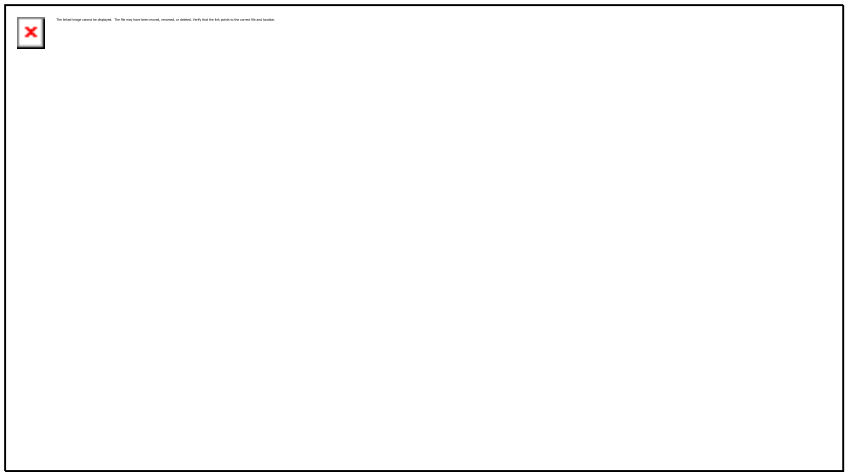


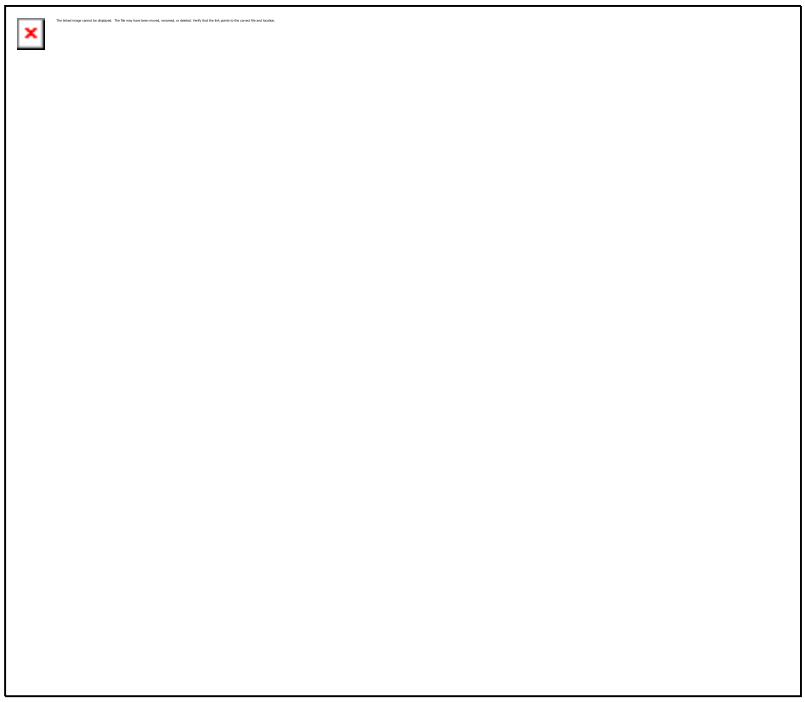


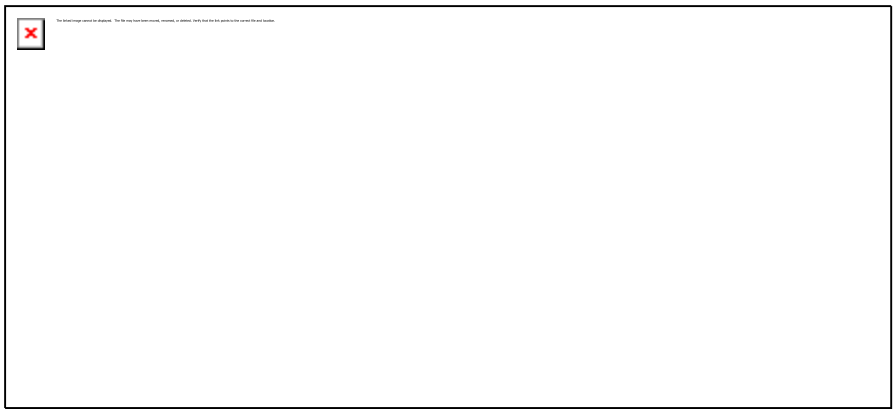


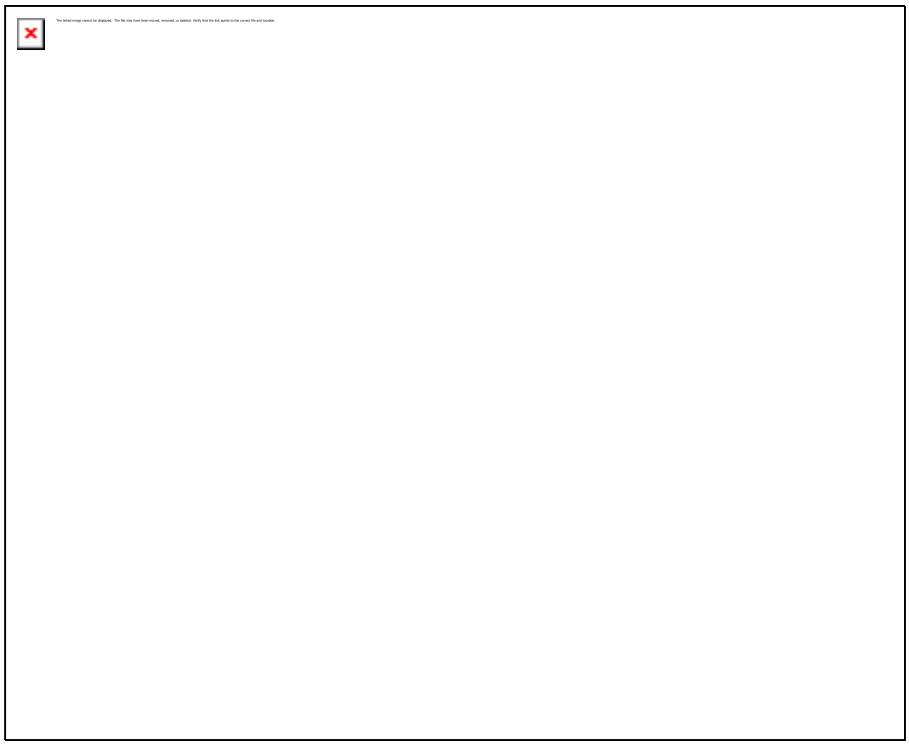


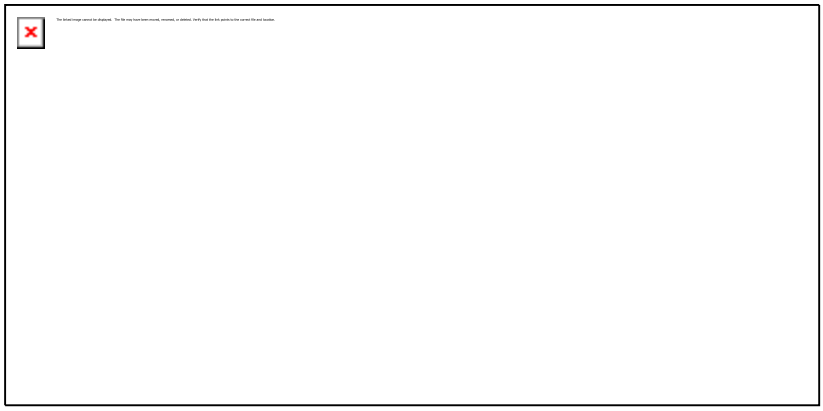


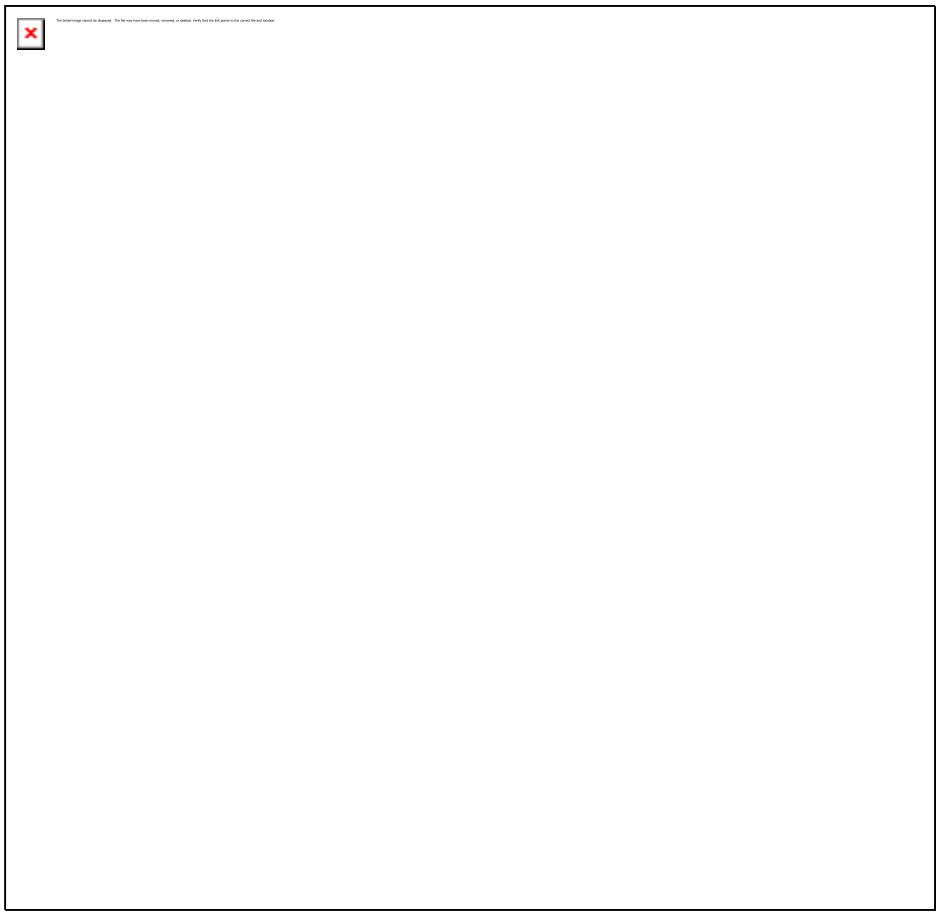


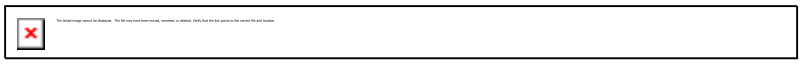


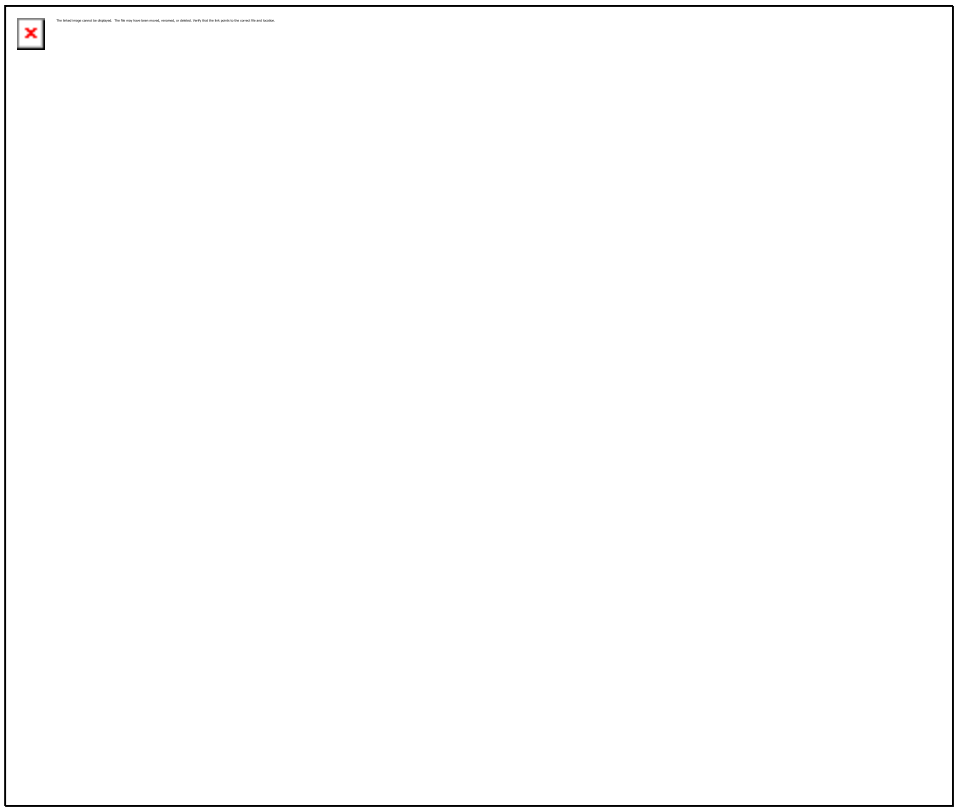


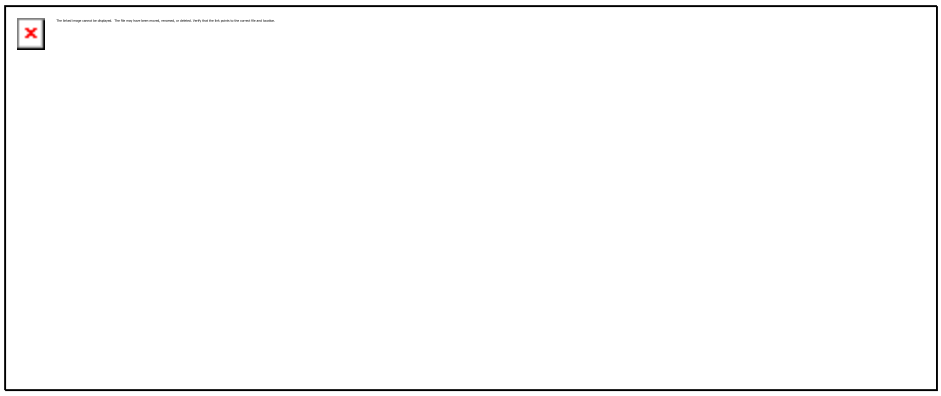


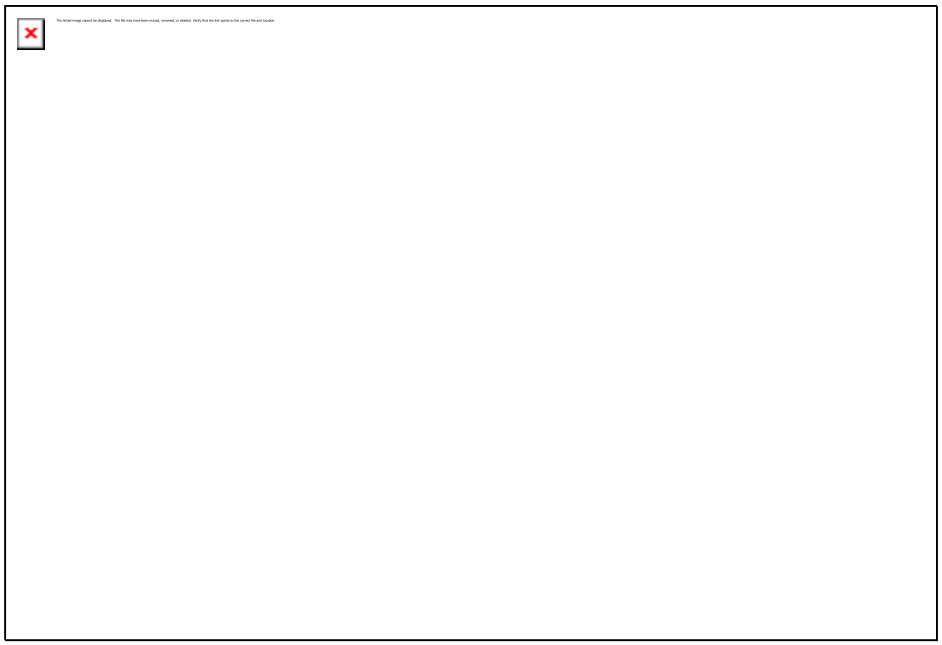


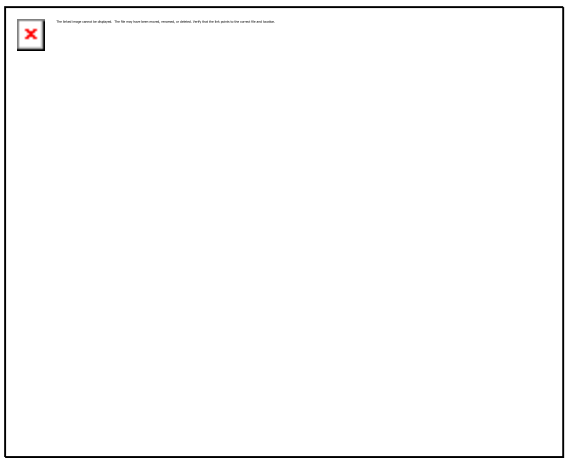


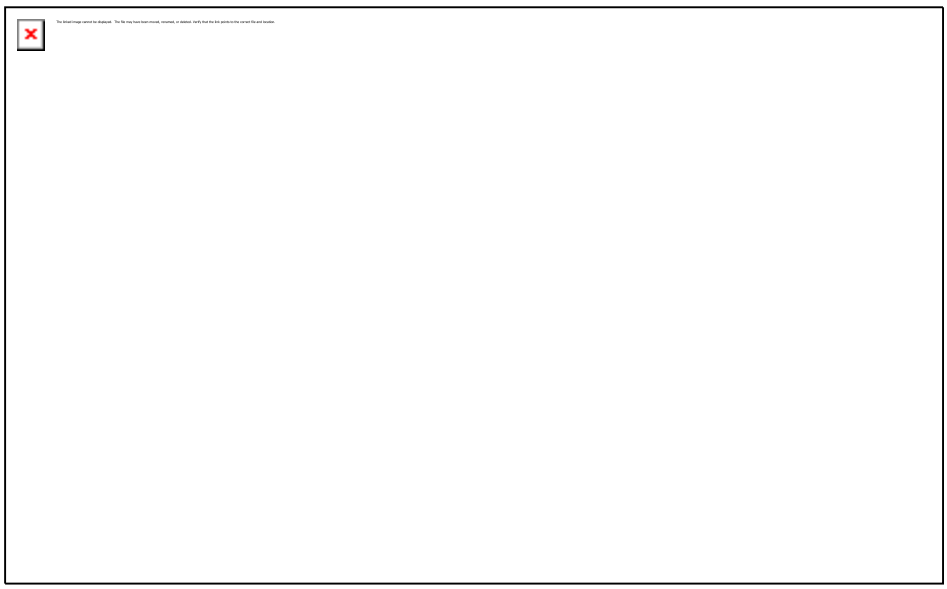


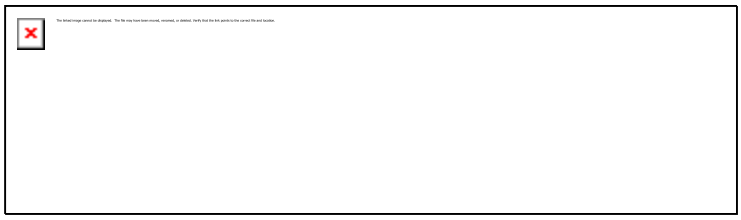


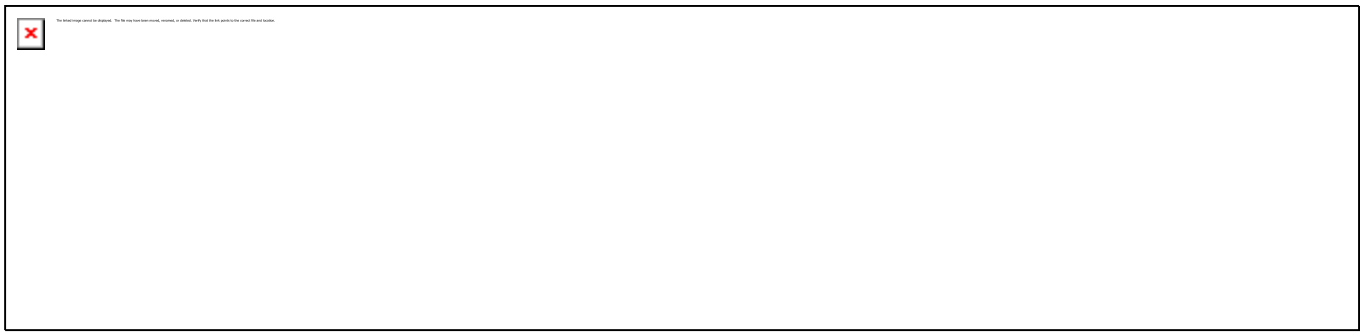




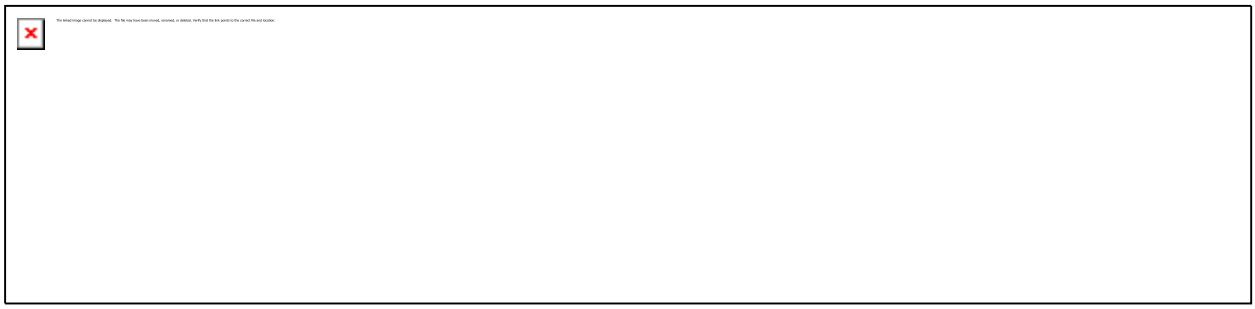




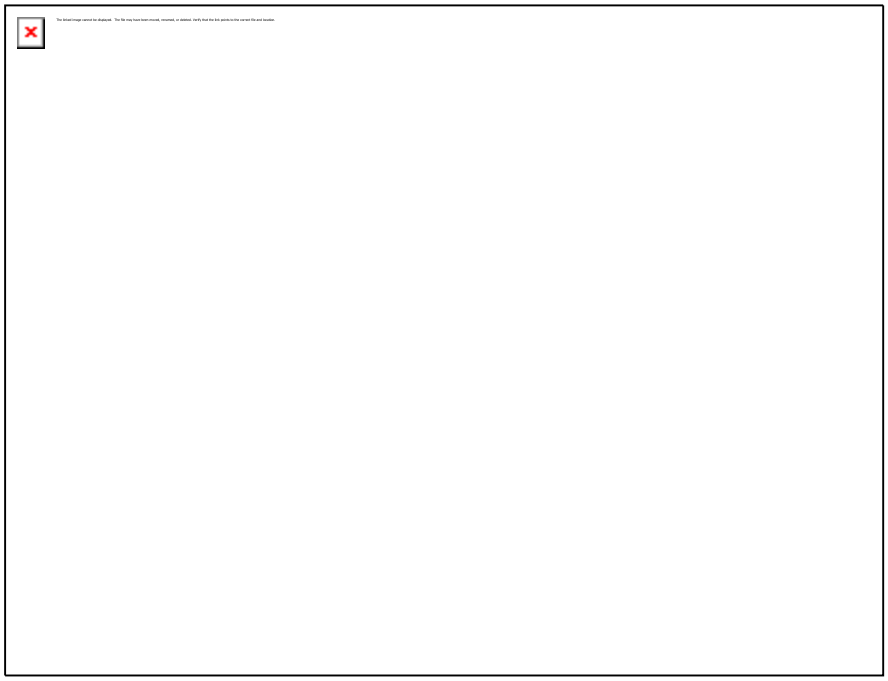


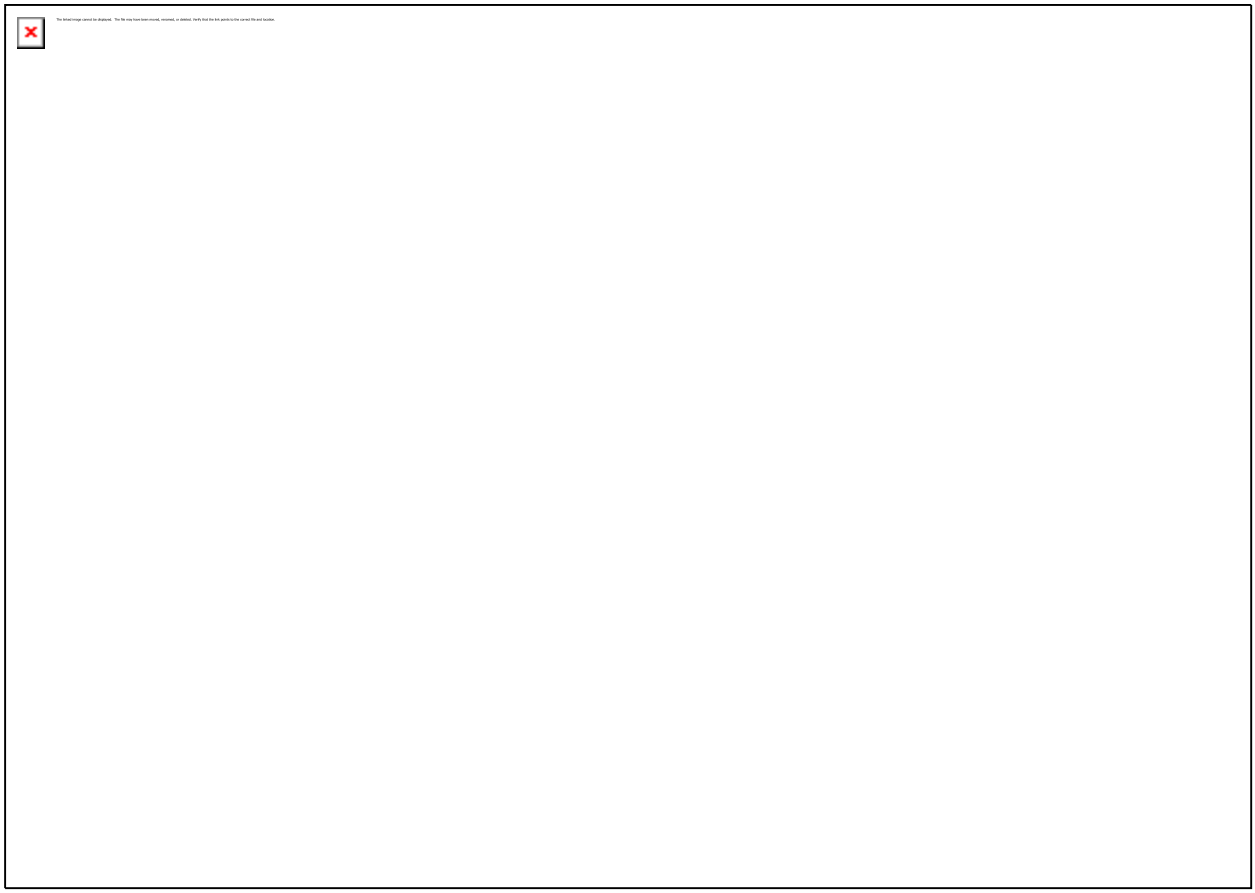


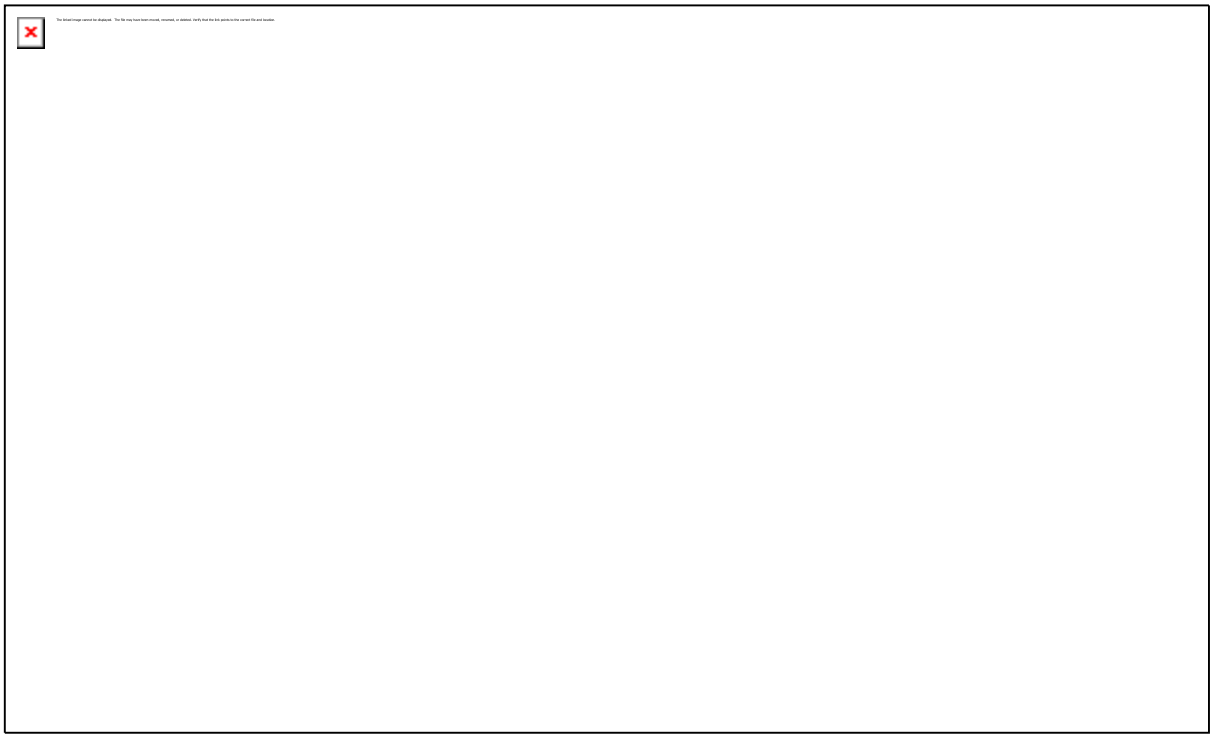
Kenyalight – Project Ltd CV's (Founder from PSECC)

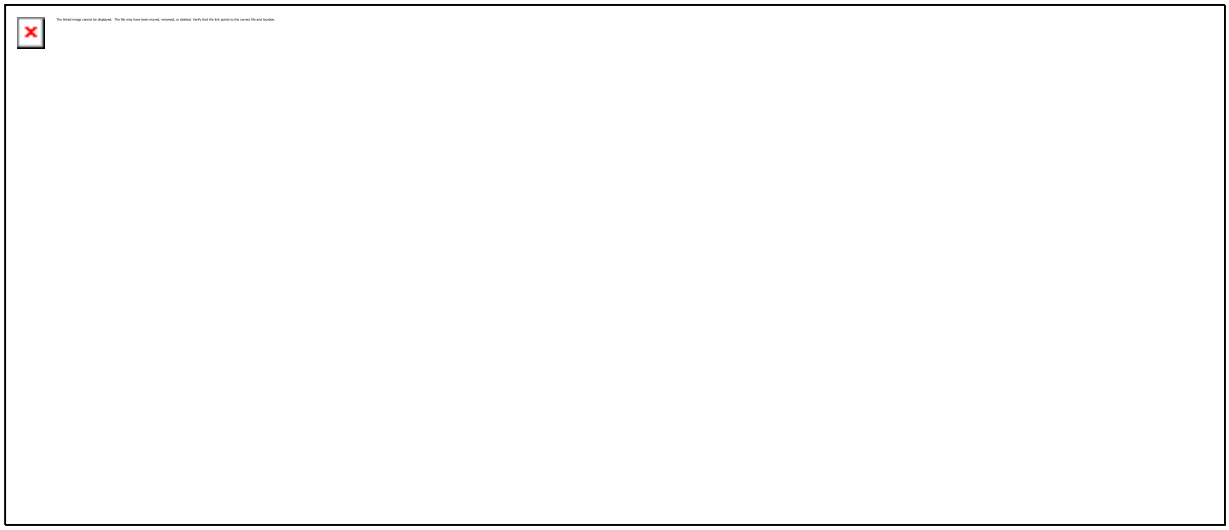


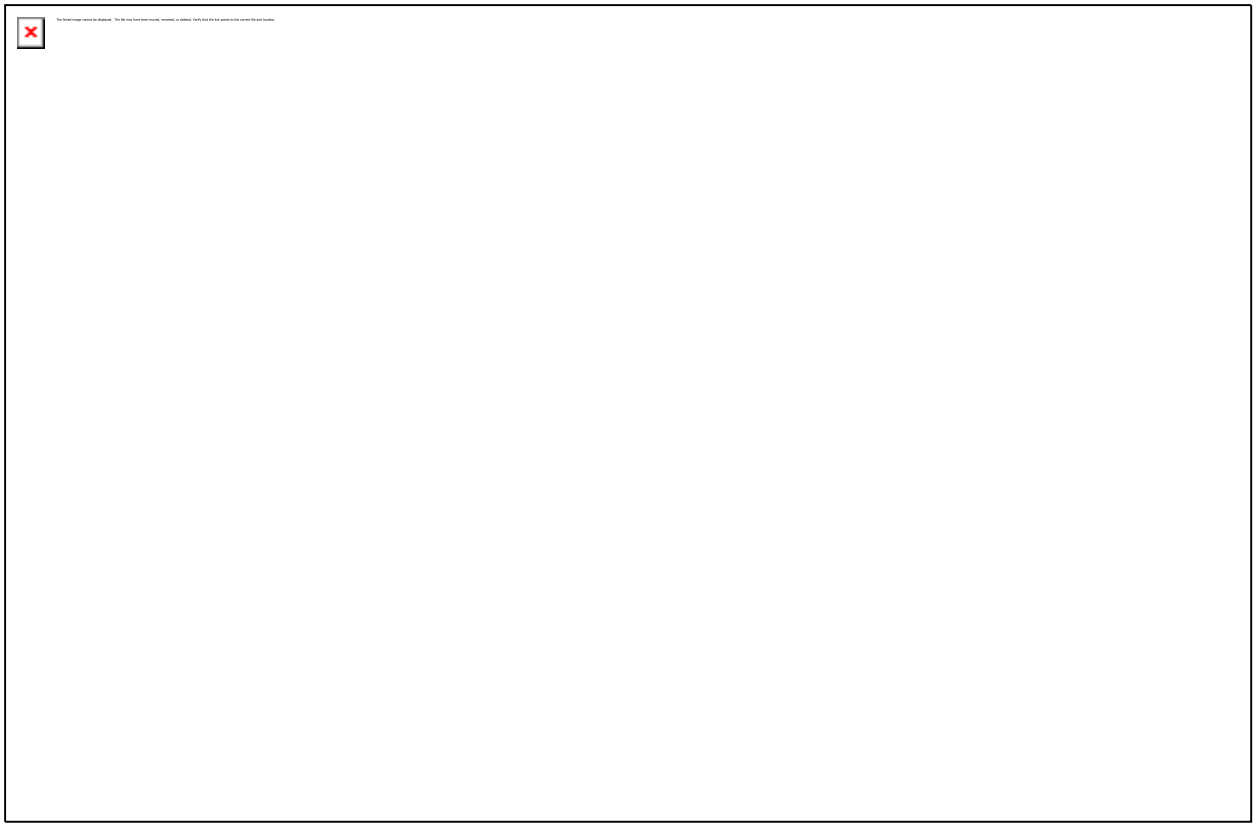
Solar Farm at Konsa City 10MW and also possibly in our development programme will be off grid at a later date -

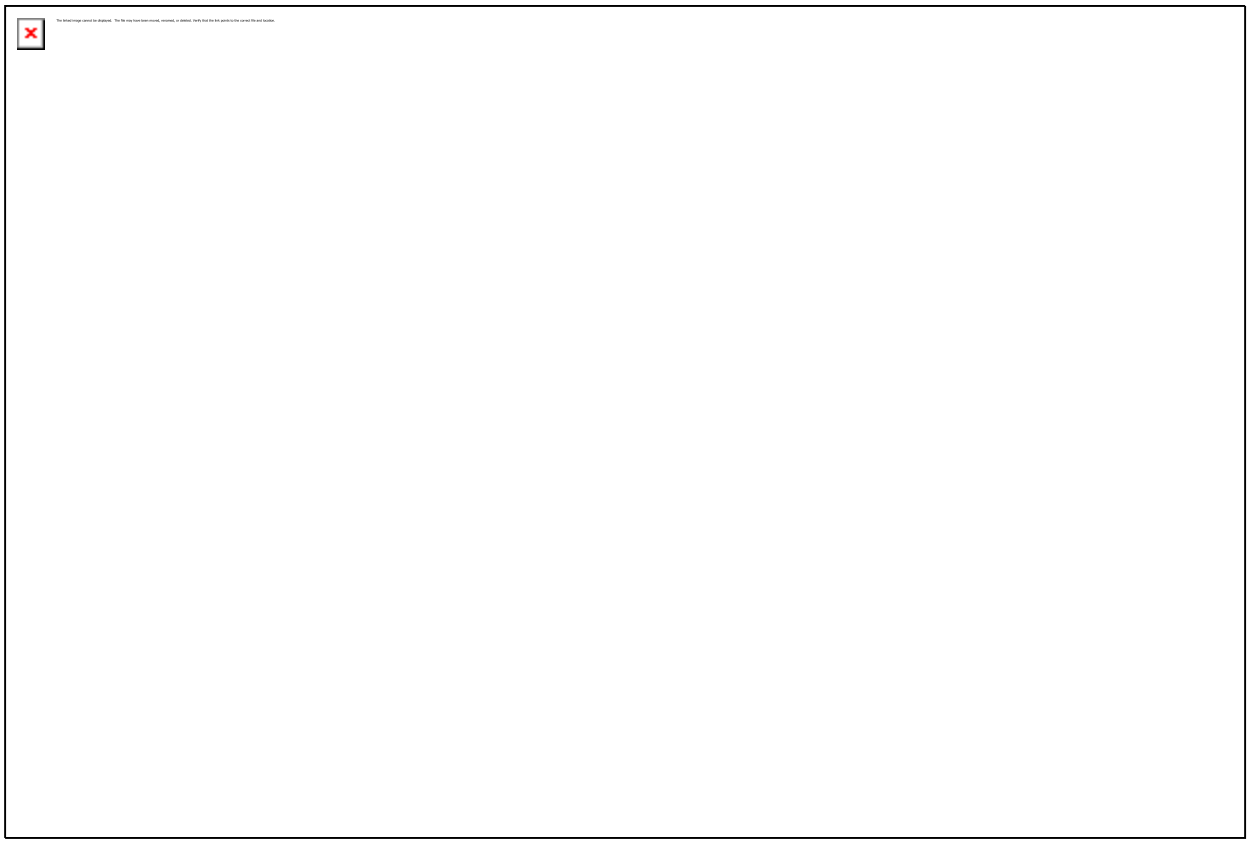


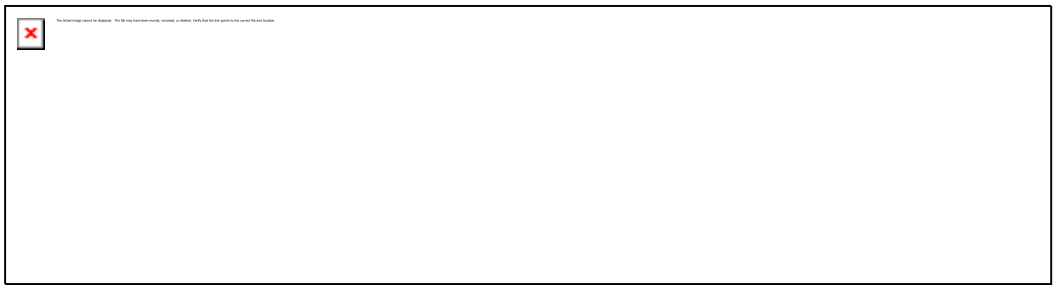






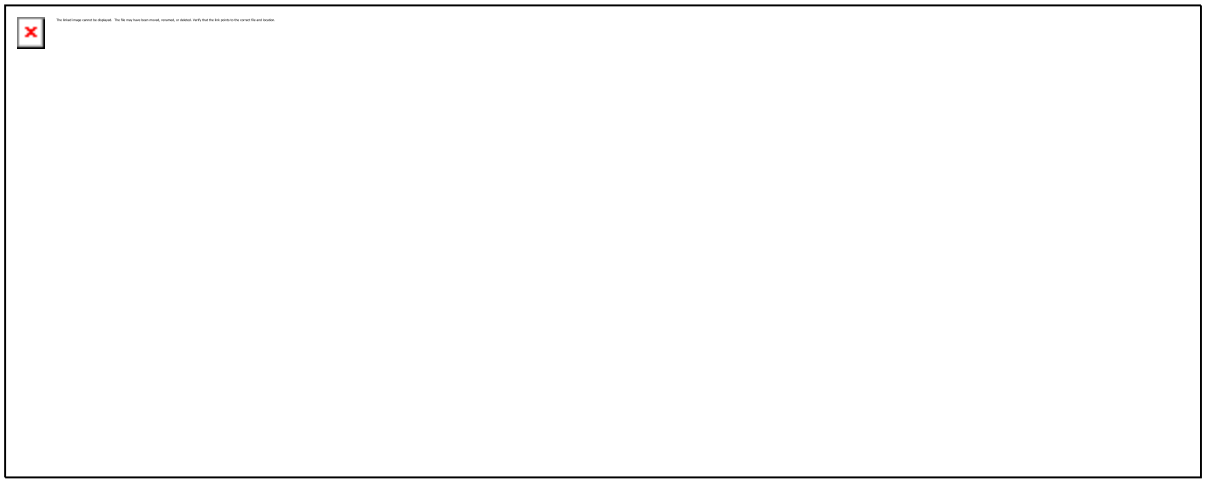


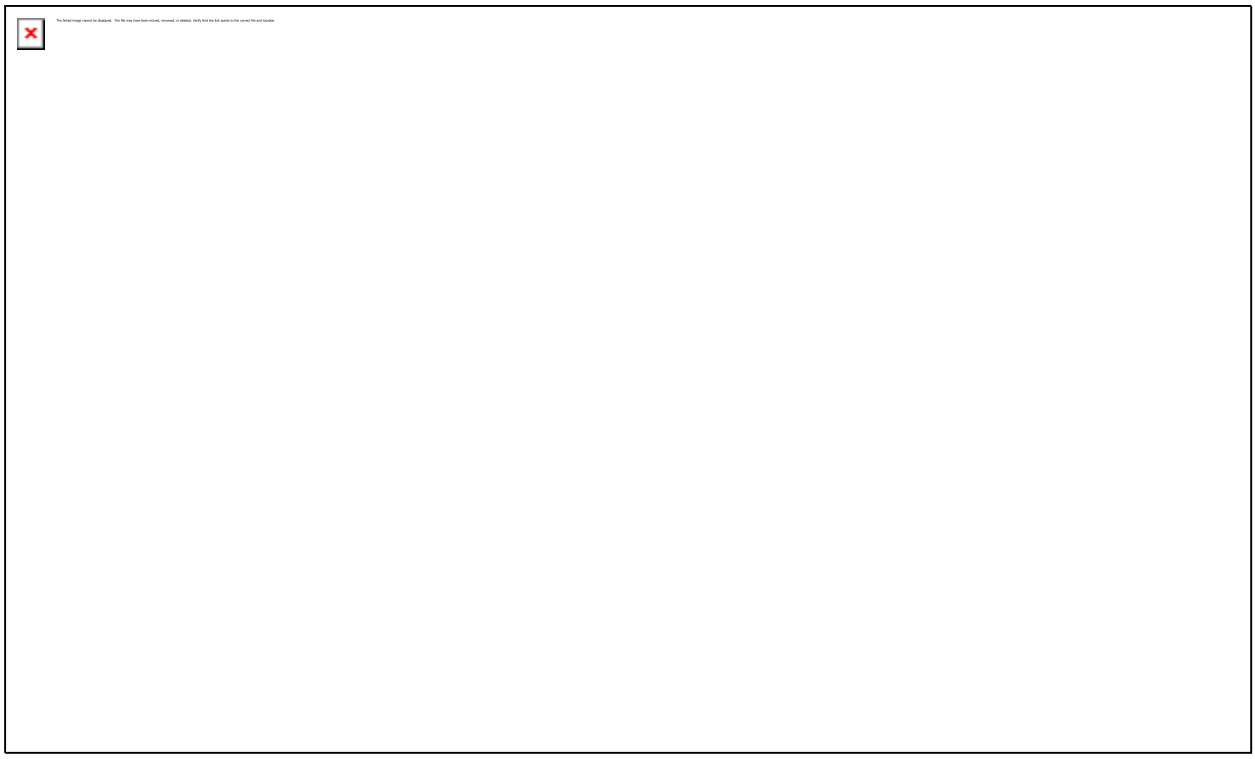


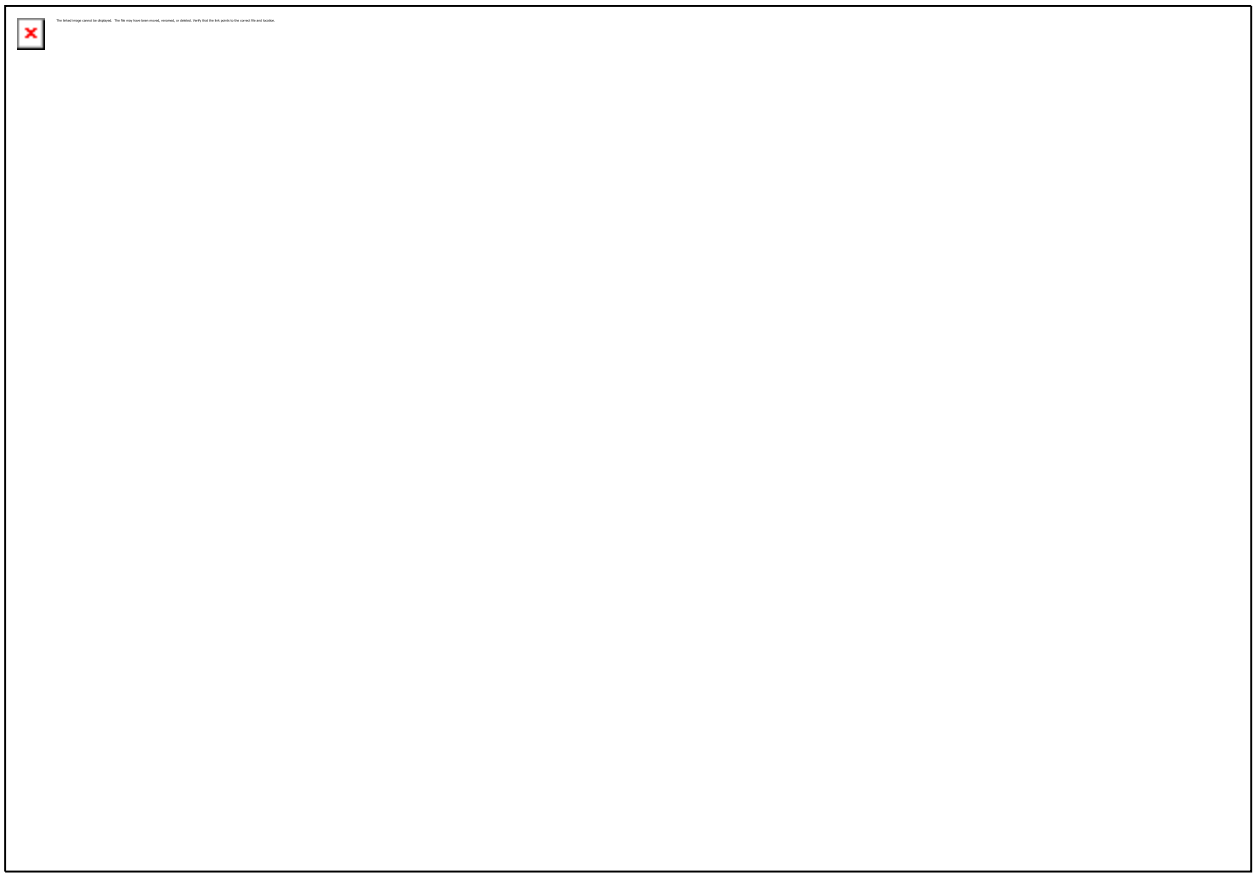


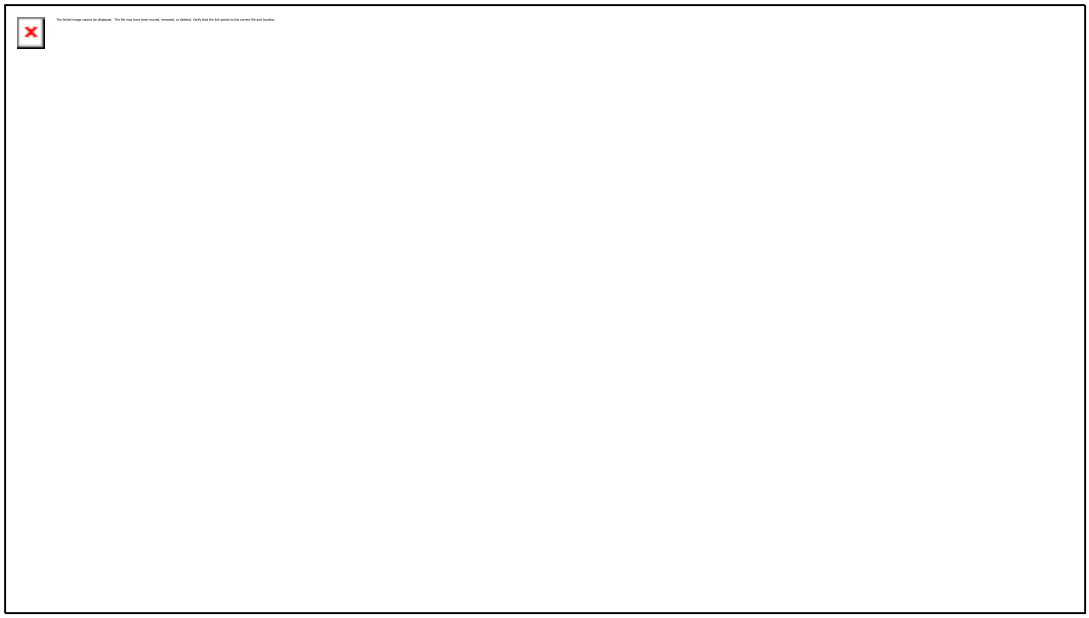
Joe Mwai (centre) Co-founder of Kenyalight-Project Ltd

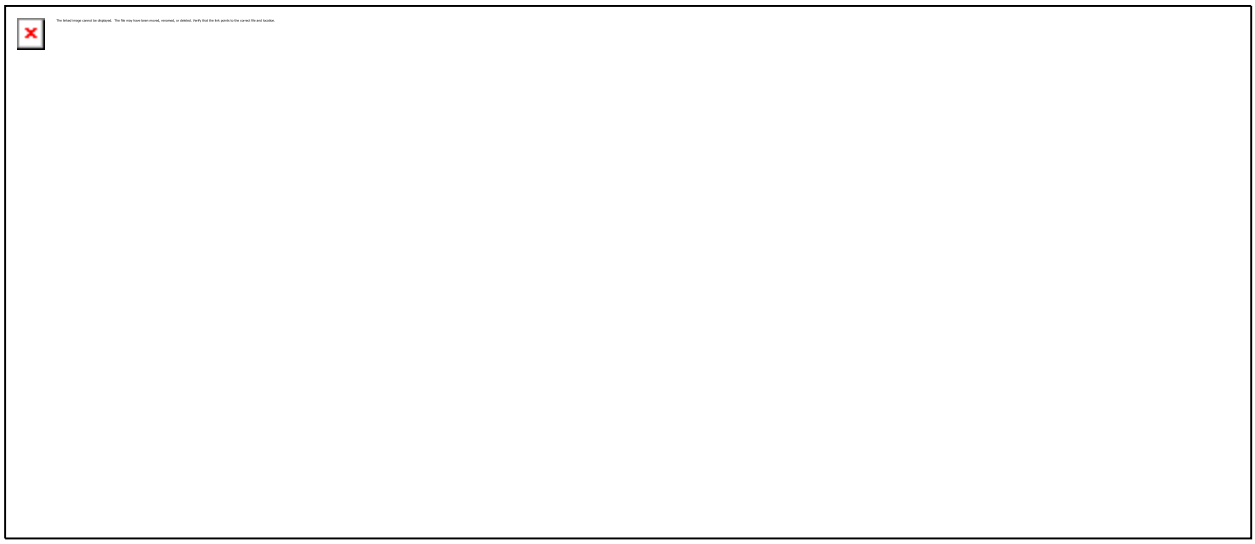
Pictured at Kenya London Embassy in London

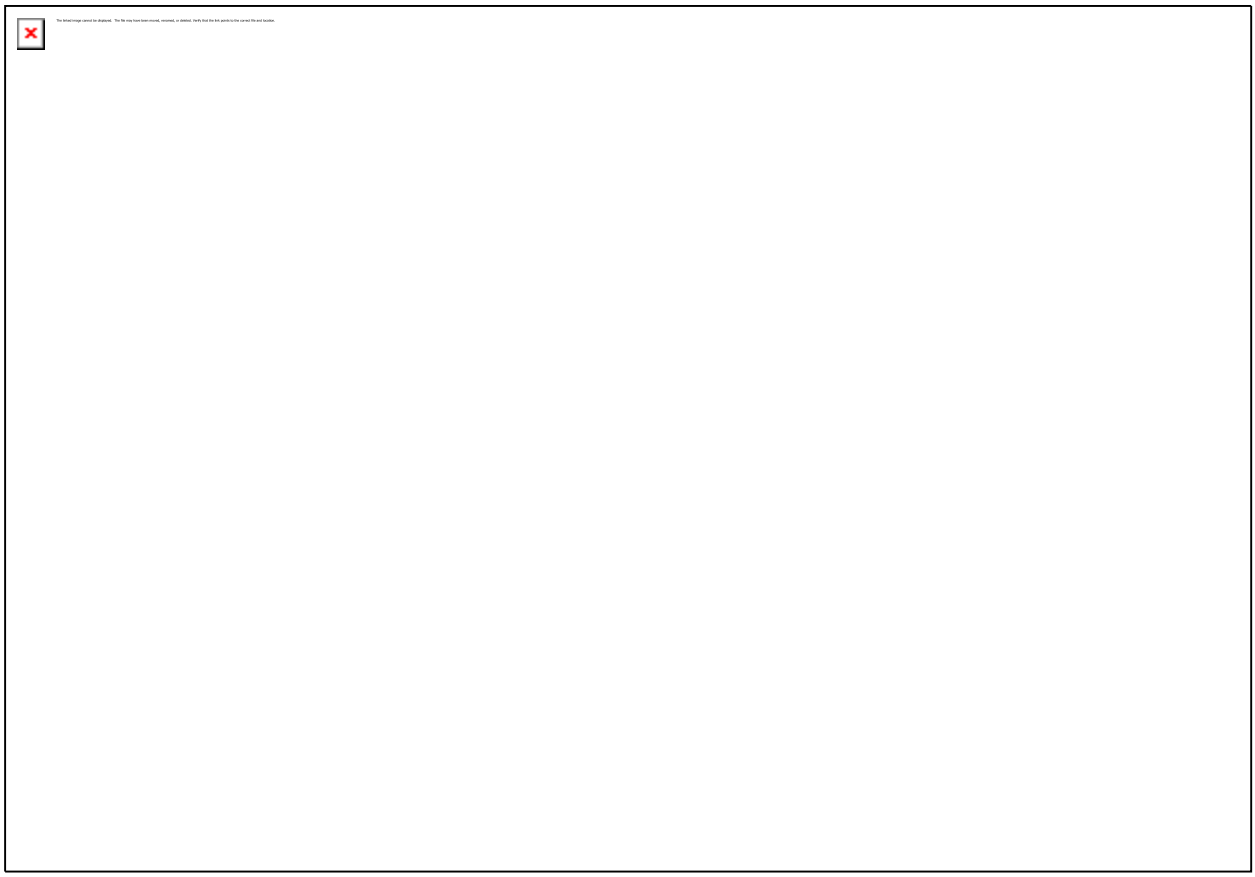


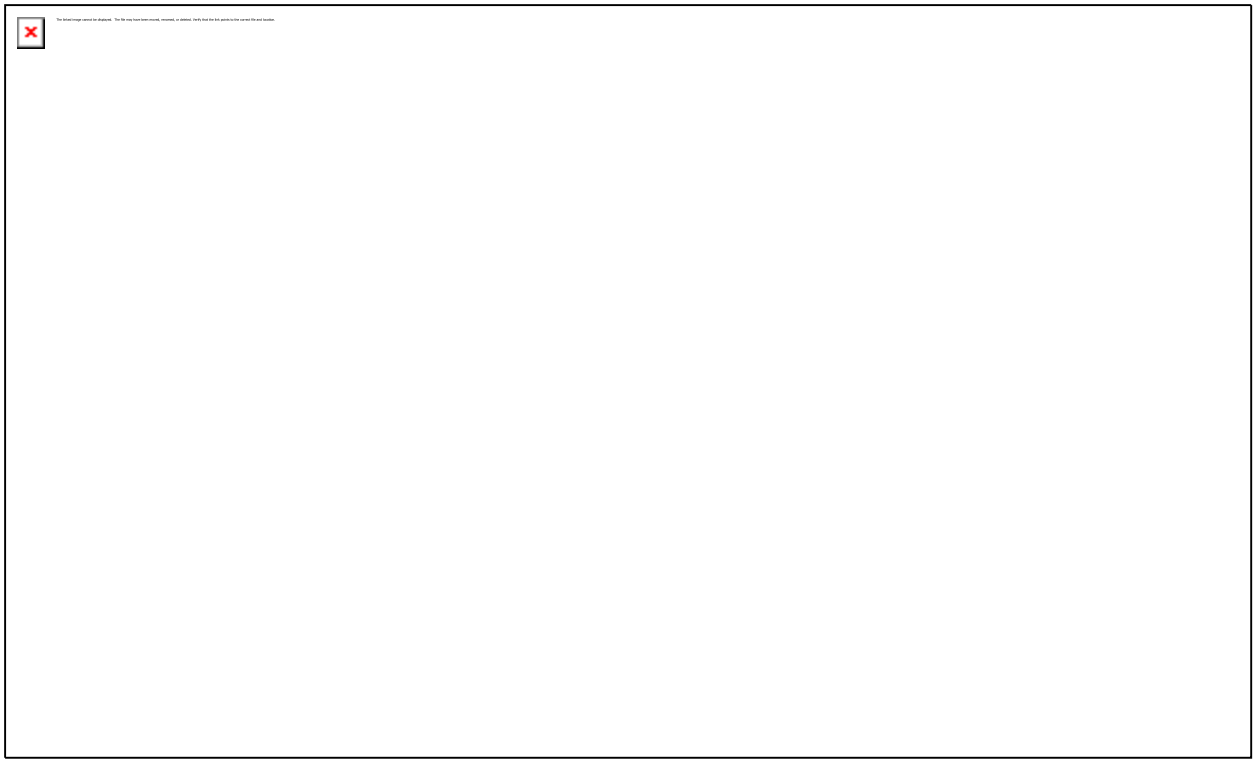


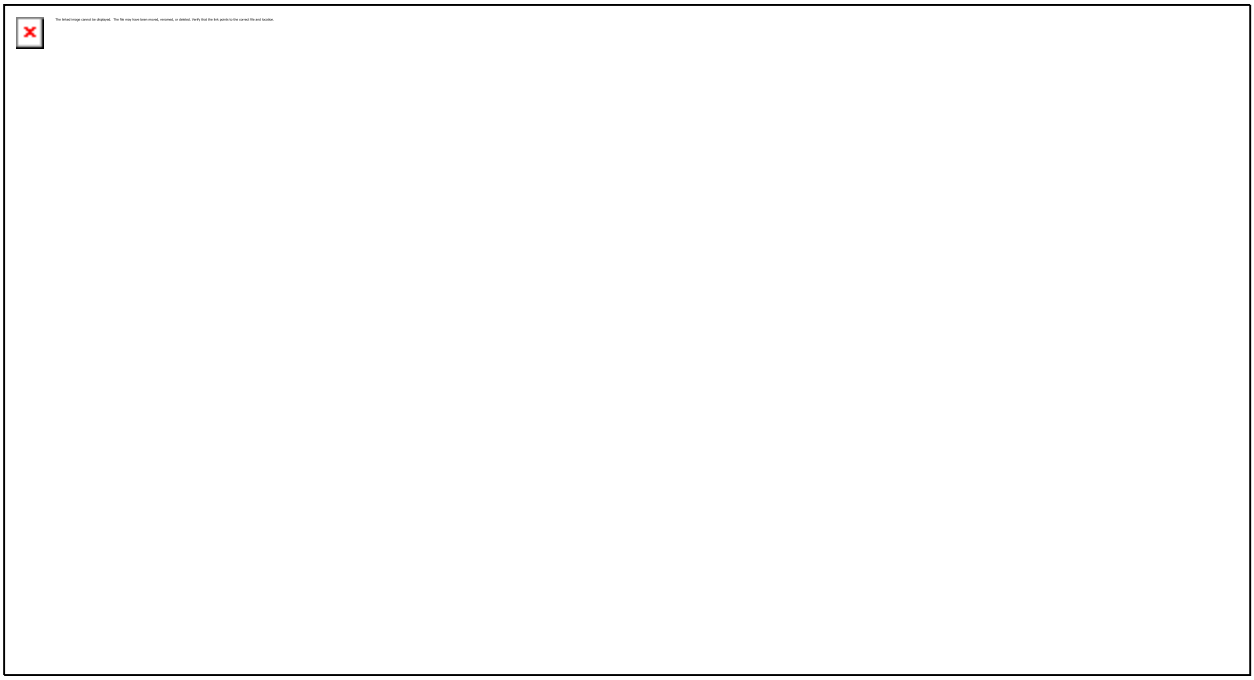


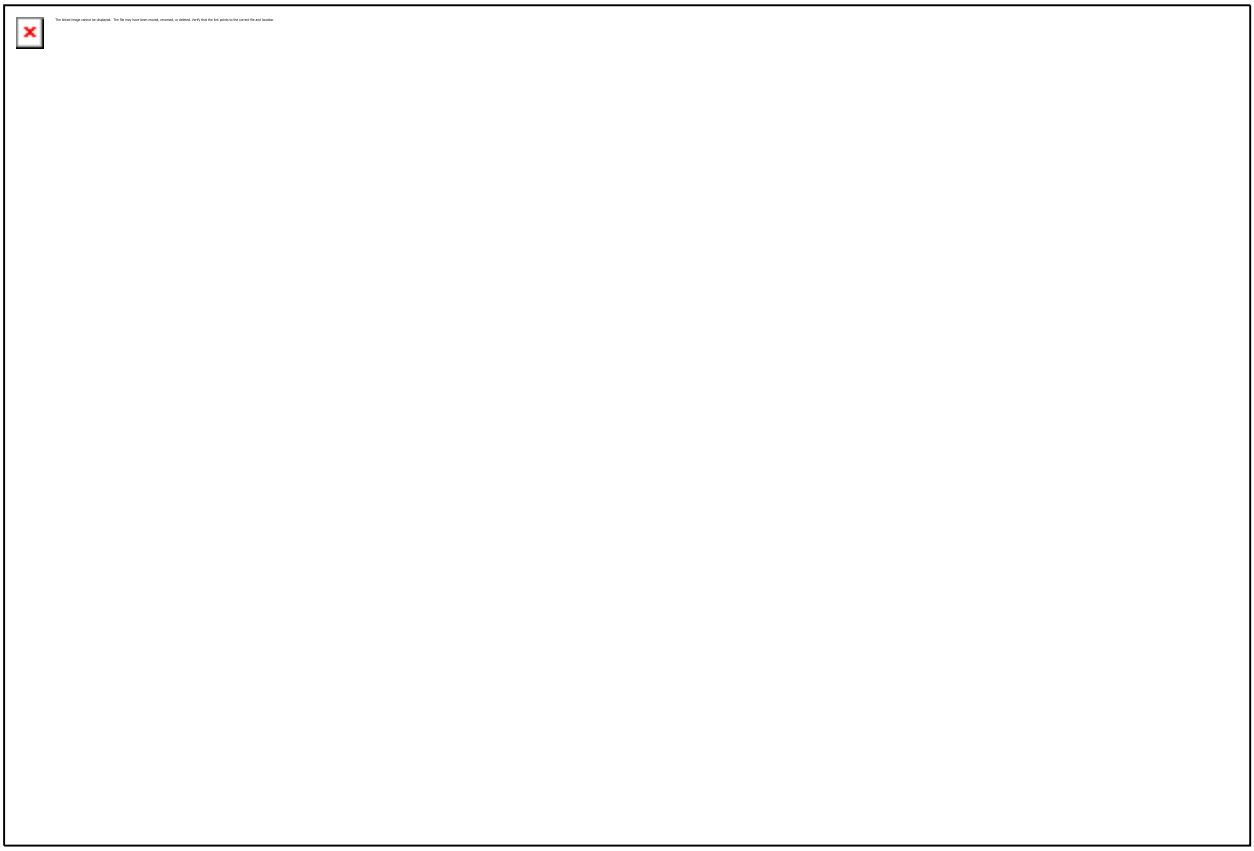


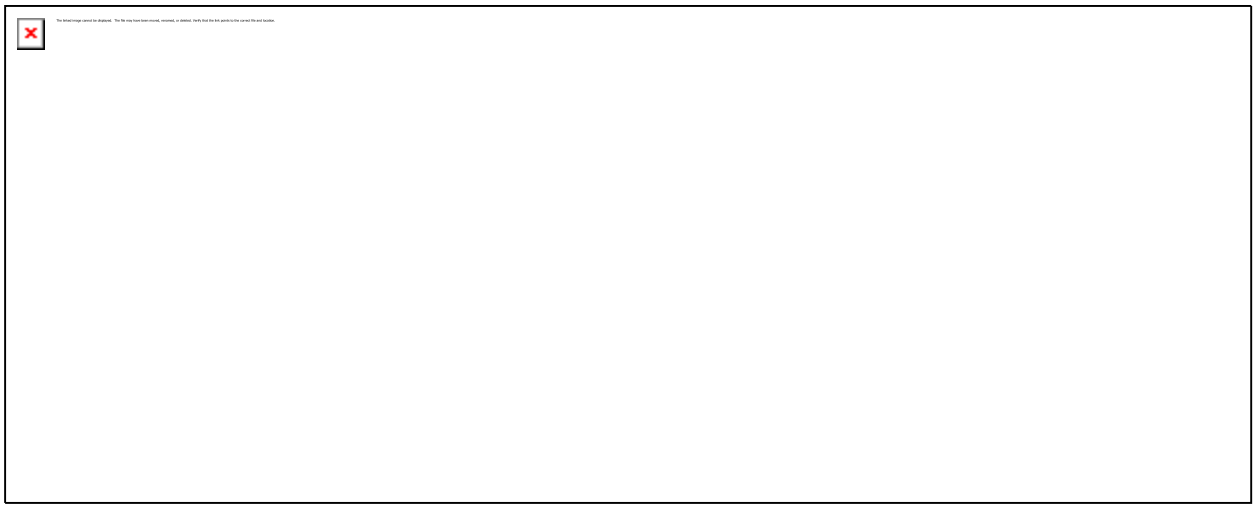


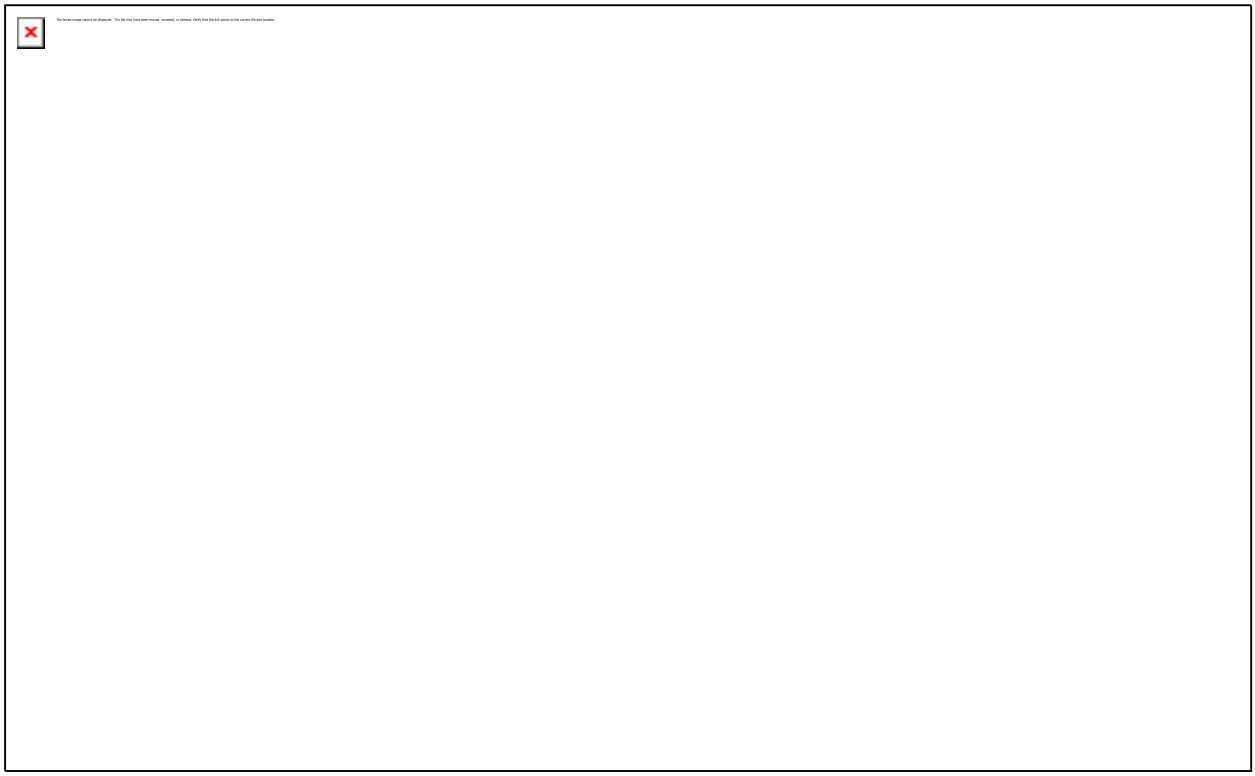


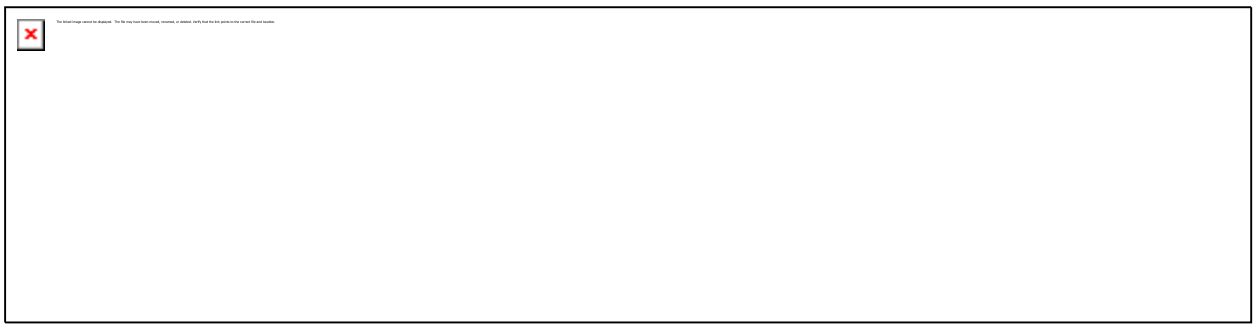


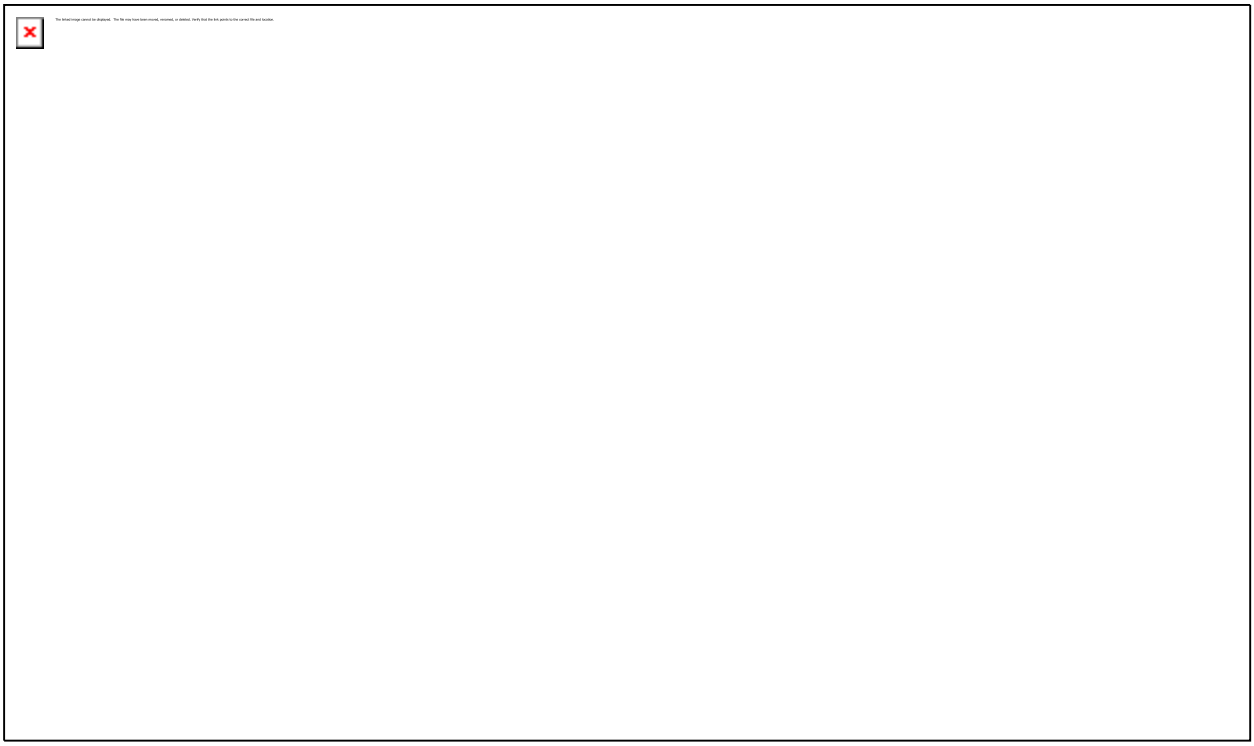


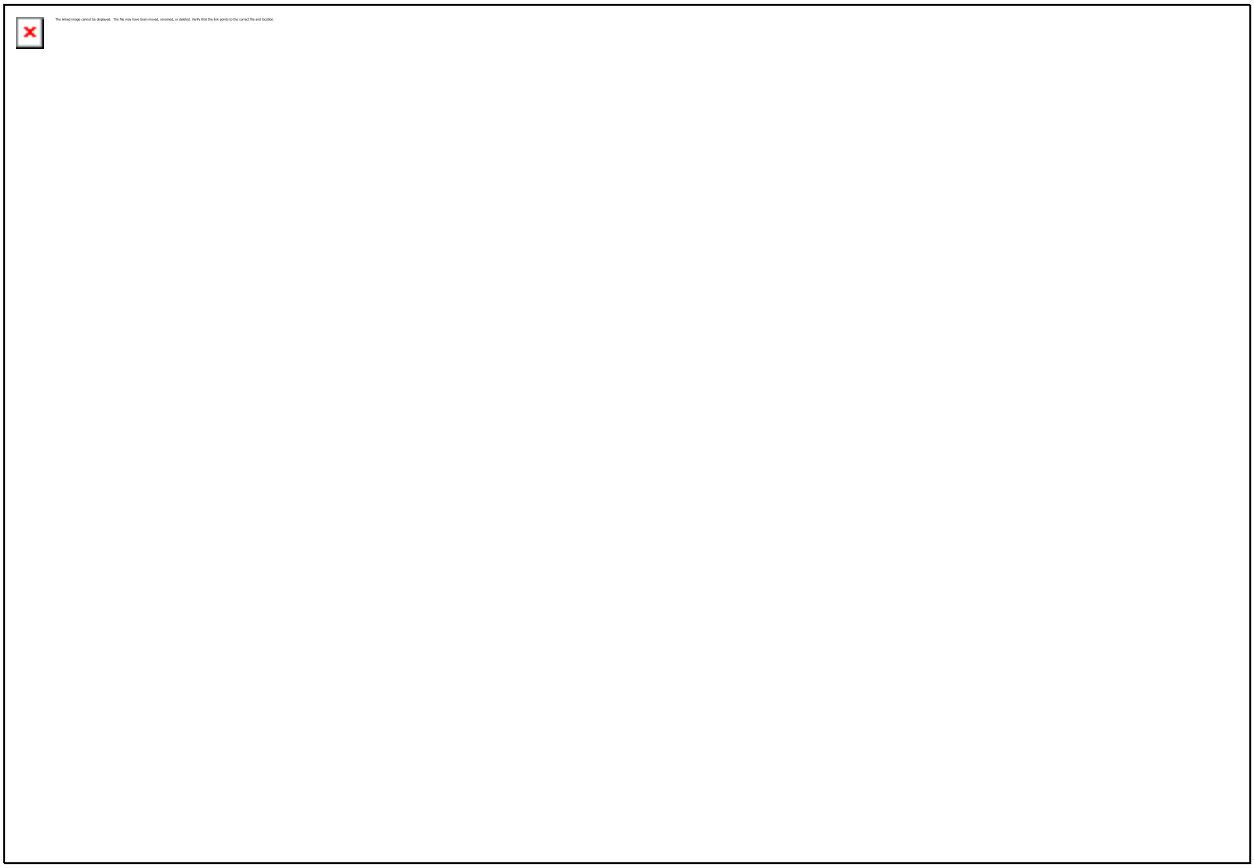




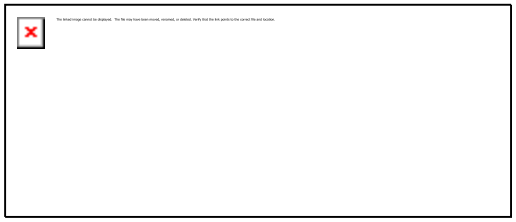


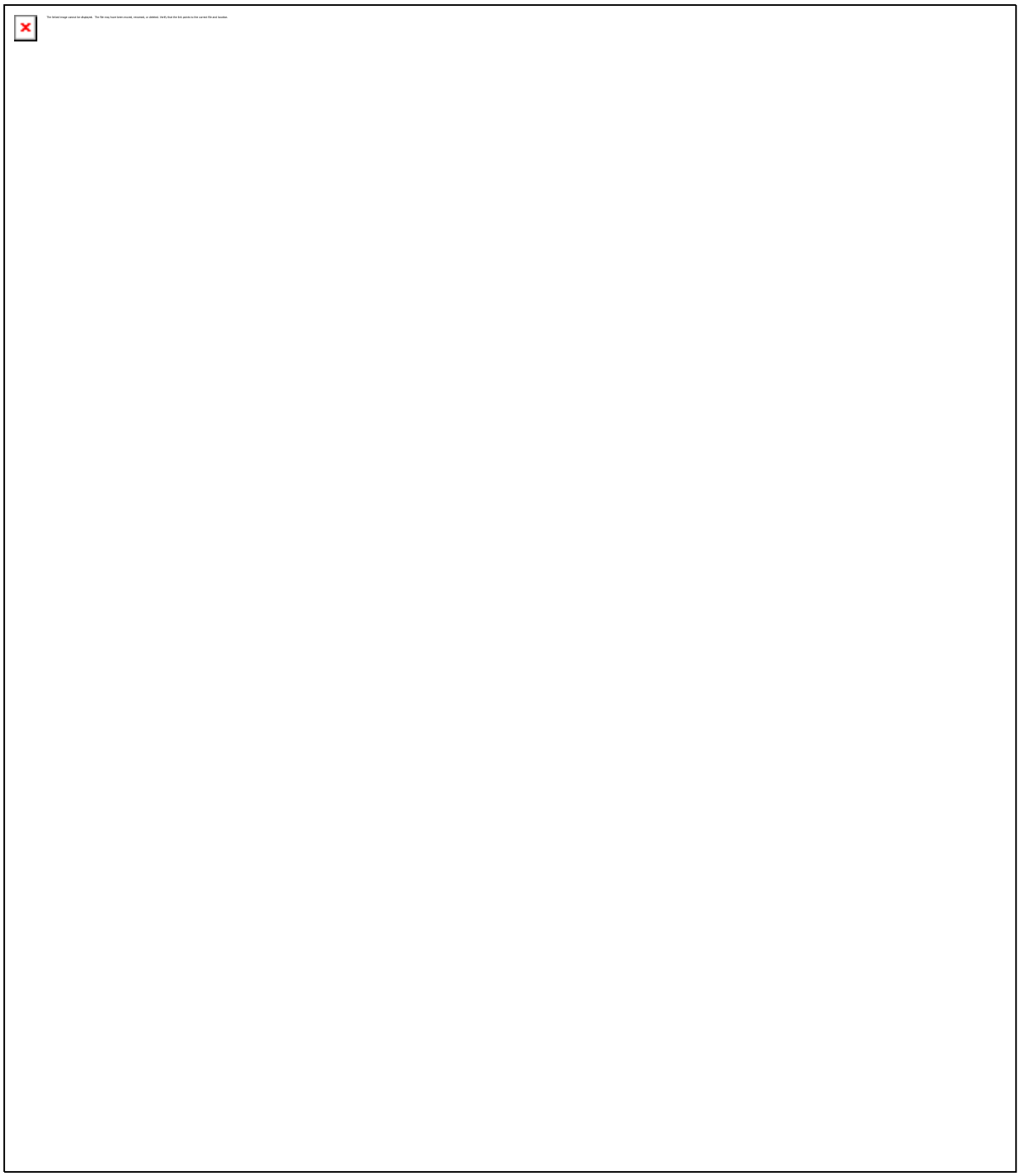


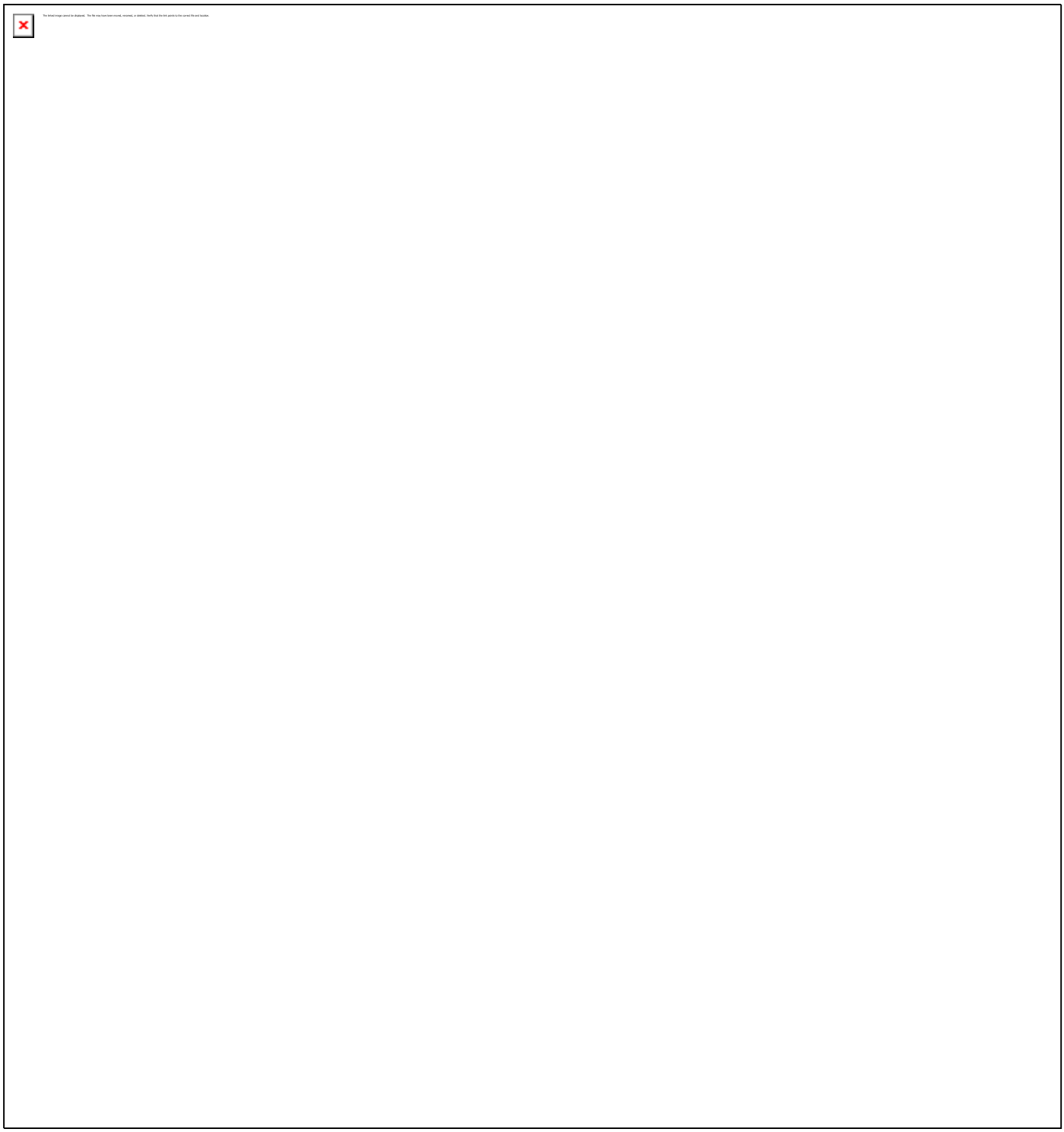


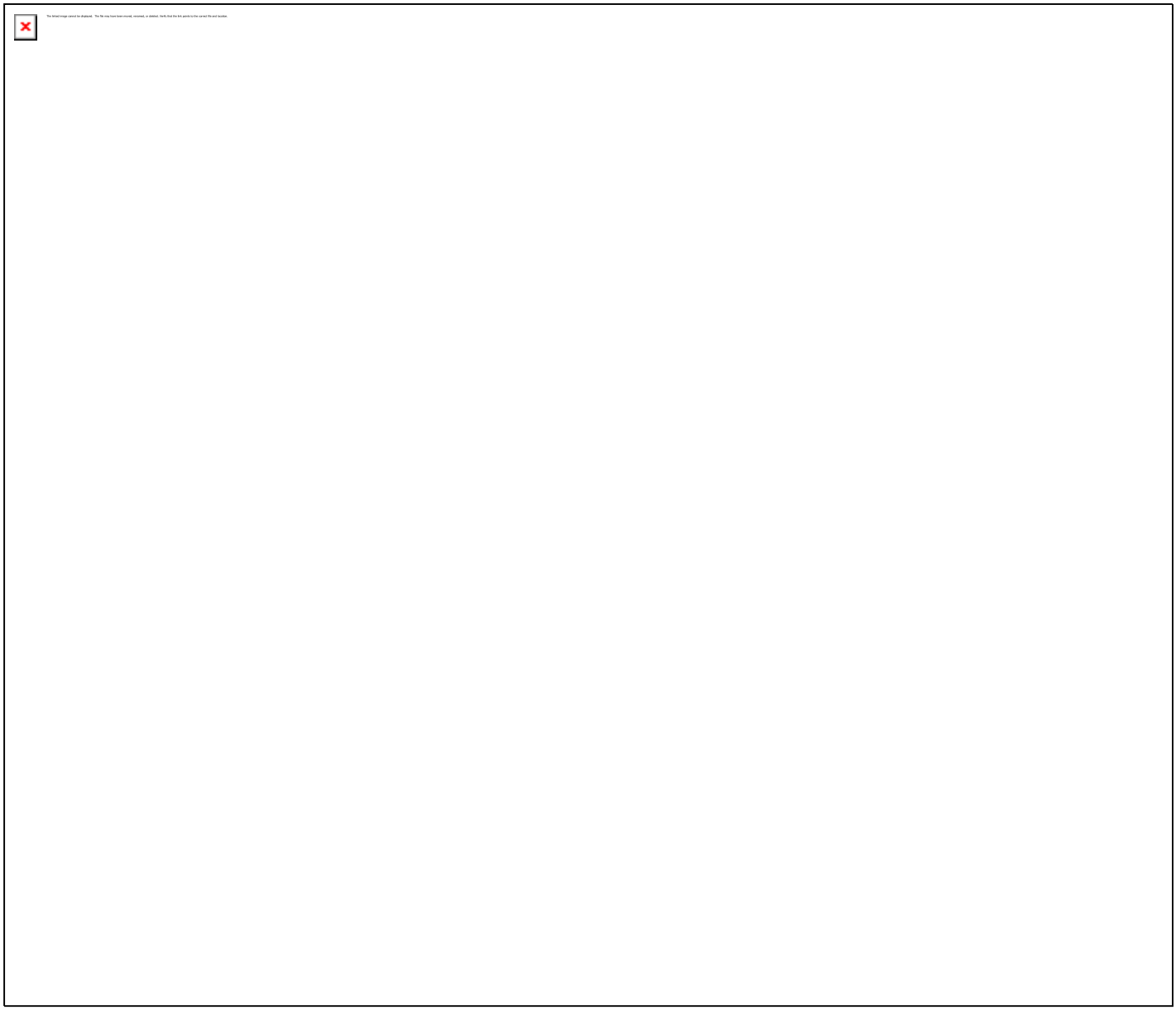


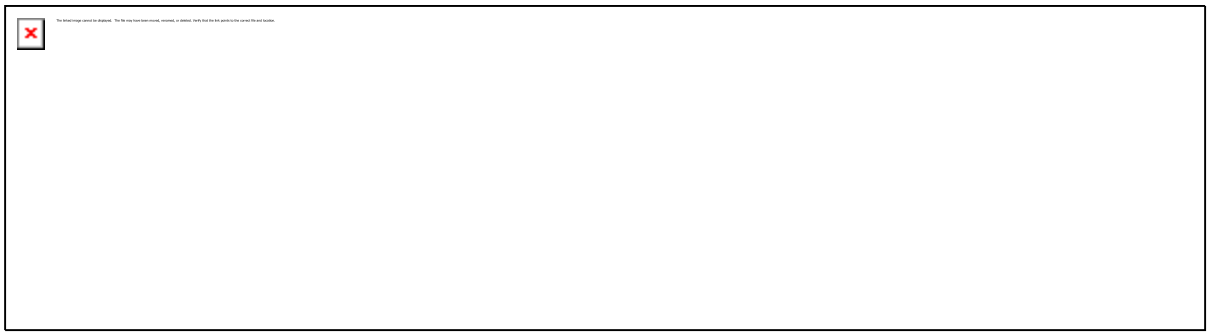
Founder of PSECC & Kenyalight-Projects Ltd – Alan Brewer MSc.











To whom it may concern

Reference Mr Alan Brewer

I was the Director of the Hampshire Natural Resources Initiative (HNRI) until I left the county in 2005. The HNRI was a public /private sector network of organisations that were working in the field on conservation of natural resources; materials, water, natural environment and the development of renewable energy.

Mr Brewer approached the HNRI representing a network of organisations that were interested in providing renewable solutions and with the potential to realise funding that would promote the development of renewable energy projects. At the time what was needed was someone to pull together those interested in this area and Mr Brewer was given this task.

Mr Brewer did present the HNRI with a report on ideas and opportunities for future development.

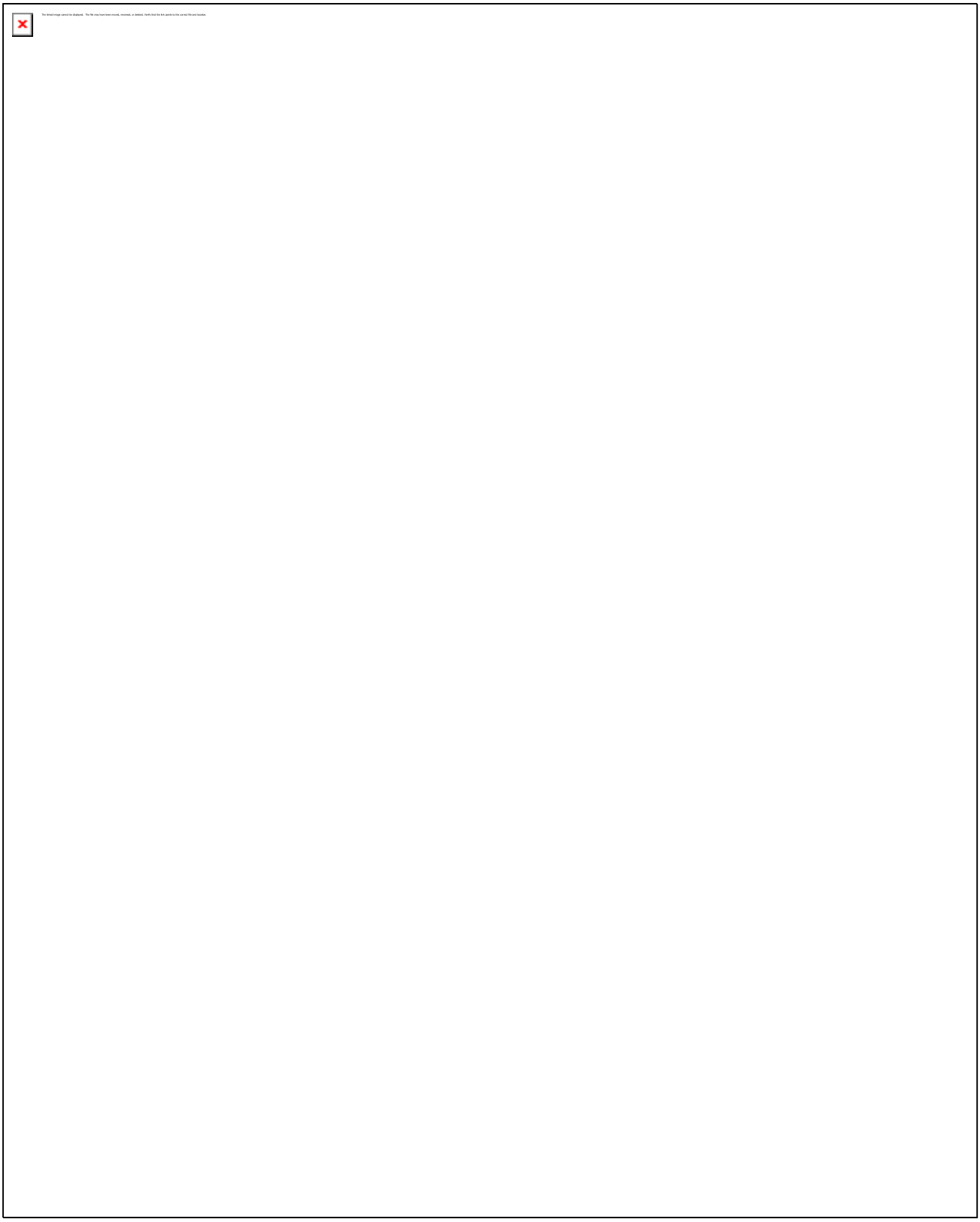
Whilst not involved as a Director or trustee of HNRI MR Brewer was active in this area and attended a number of meetings and offered a range of ideas.

The HNRI embedded into the county an approach to sustainability that has seen a number of results on all areas of its work.

Bob Lisney

Ex Director HNRI

18/11/11



South East
Blandford House, Farnborough Road, Aldershot, Hants GU11 2HA

Telephone: Direct Dialling: 01252 361919
DCSA DFTS: (9)4217 3919
Facsimile: 01252 361954
E-mail: richard.mortimer@de.mod.uk
Internet Site: www.defence-estates.mod.uk

A.Brewer Esq
International Agenda 21 Ltd
39 Woodhay Walk
Havant
Hants
PO9 5RD

Your Ref.

Our Ref.

Date. 29/11/05

Dear Alan

Re: Renewables Energy Initiatives

I refer to our meeting and your subsequent letter dated the 23rd November 05 where we discussed the promotion of the above through the eventual Aldershot Urban Extension marketing initiatives.

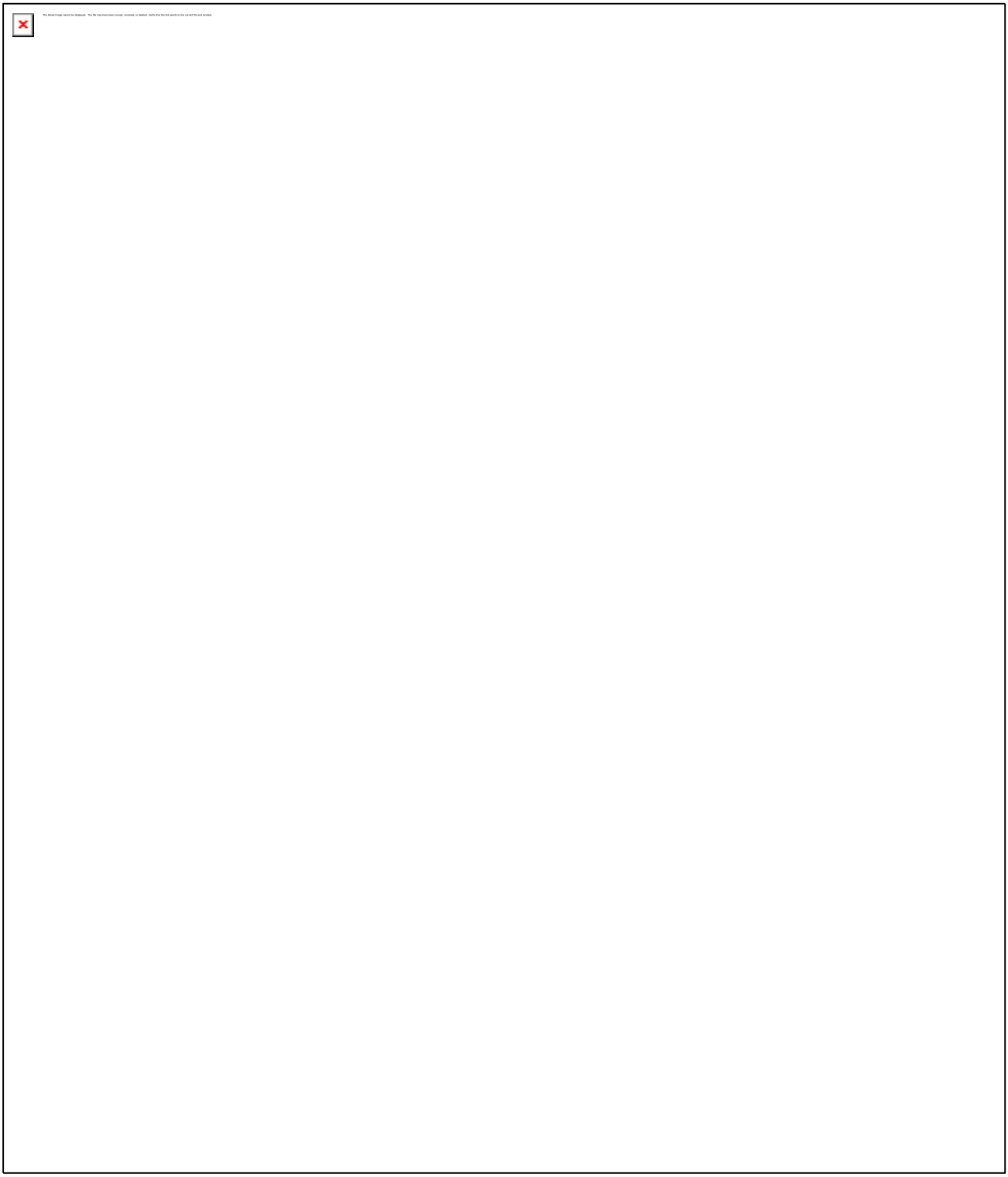
As mentioned at our meeting, I am personally supportive of your aims and aspirations and would be prepared to promote these initiatives to developers through the marketing material. You mentioned that your associates Marley Eternit Ltd, Vital Energi Ltd, IMGroup, PMSS and GE Wind would be prepared to speculatively design and cost waste management and renewable energy options which developers could consider for inclusion in their reserved matters applications. What MoD (as a public body) would need to be mindful of is not being seen to favour or promote your associates. Therefore you will appreciate that needs to be taken into account when preparing the information.

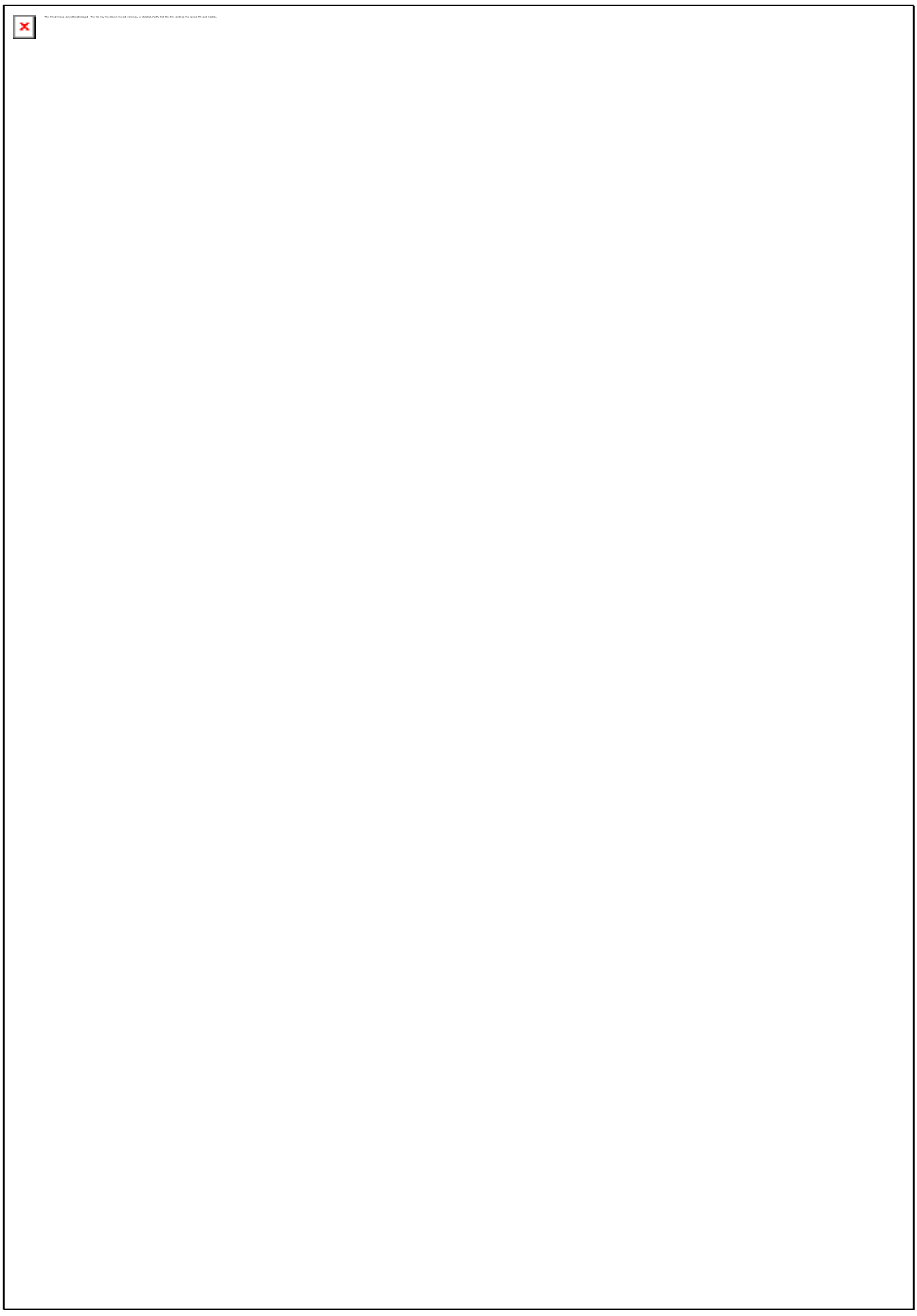
You also mentioned that there were grants available that could make the costs of using these alternatives competitive with traditional sources. I am confident that this information would incentivise developers to consider renewables. Perhaps we could liaise over the coming months so that an attractive and comprehensive package can be included for prospective purchasers of the site.

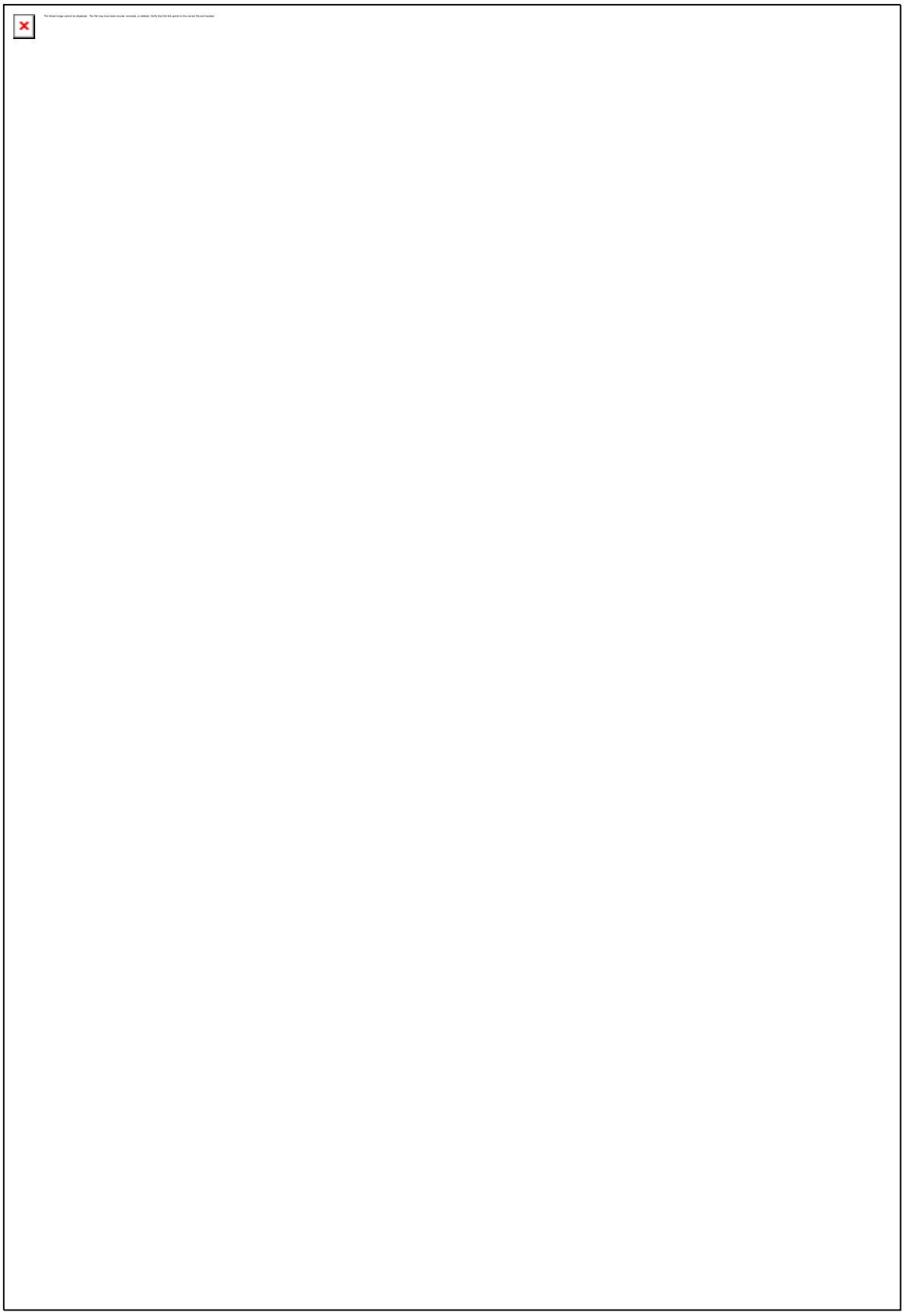
I look forward to working with you over the coming months.

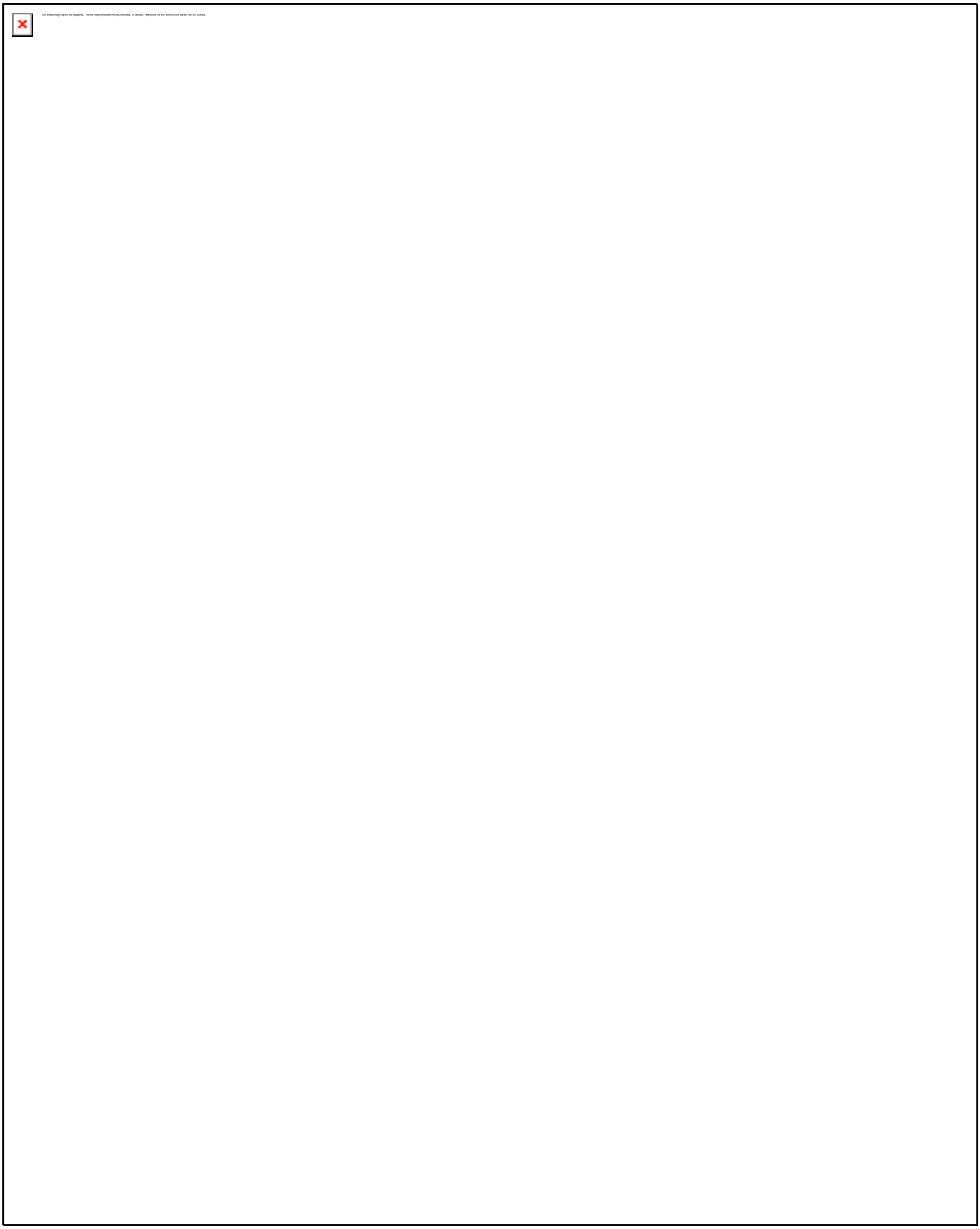
Yours sincerely

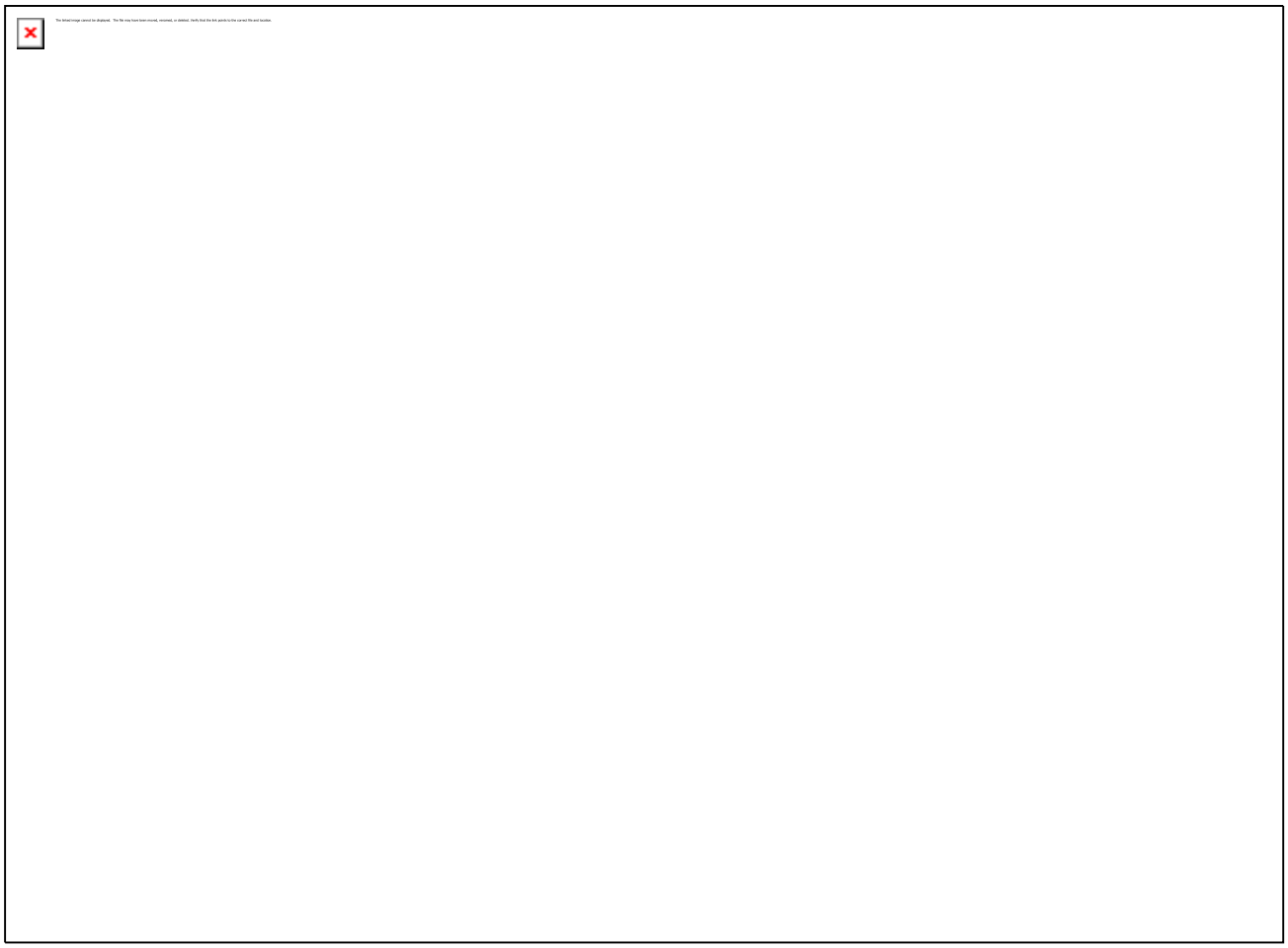
Richard Mortimer

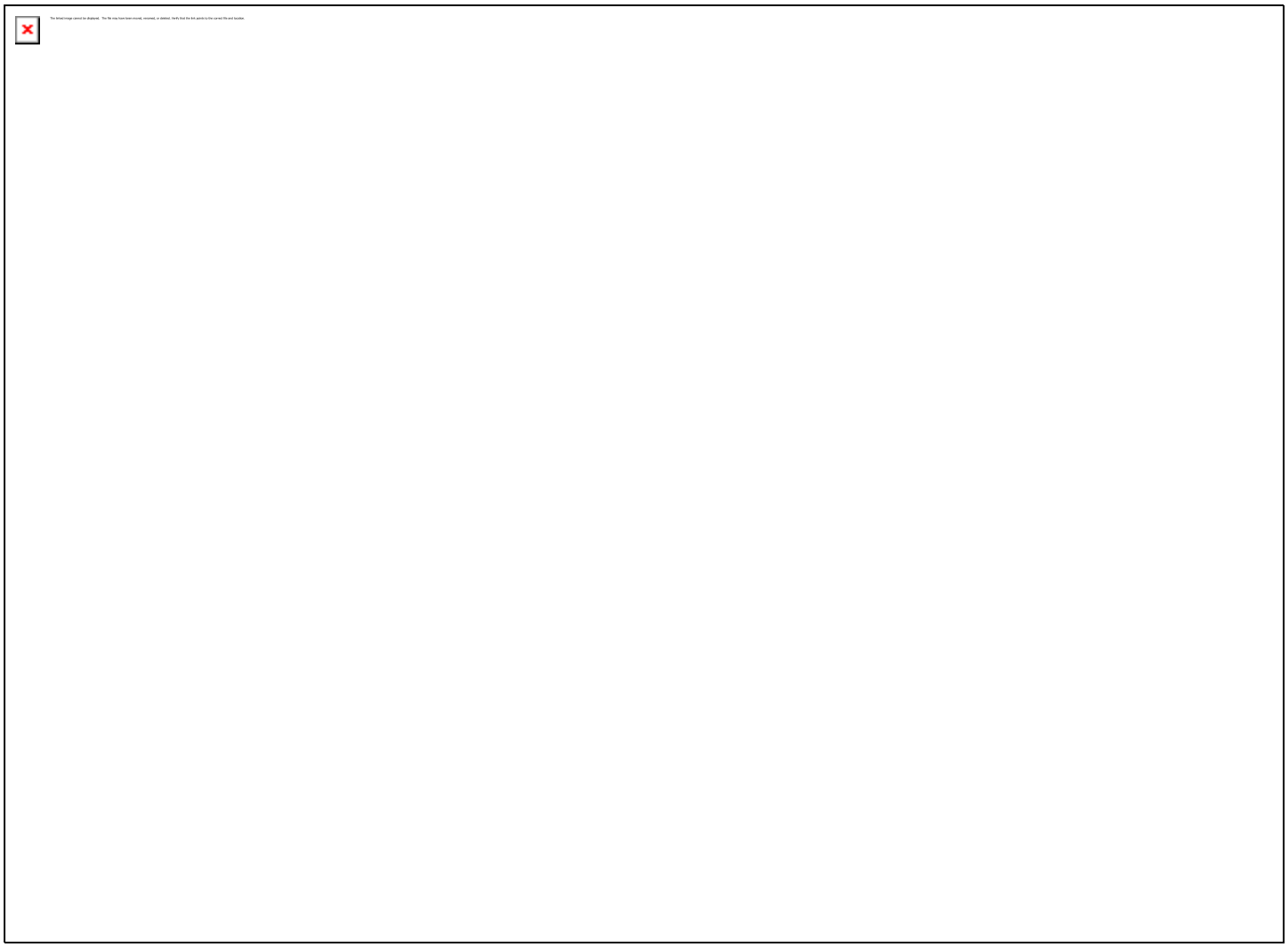




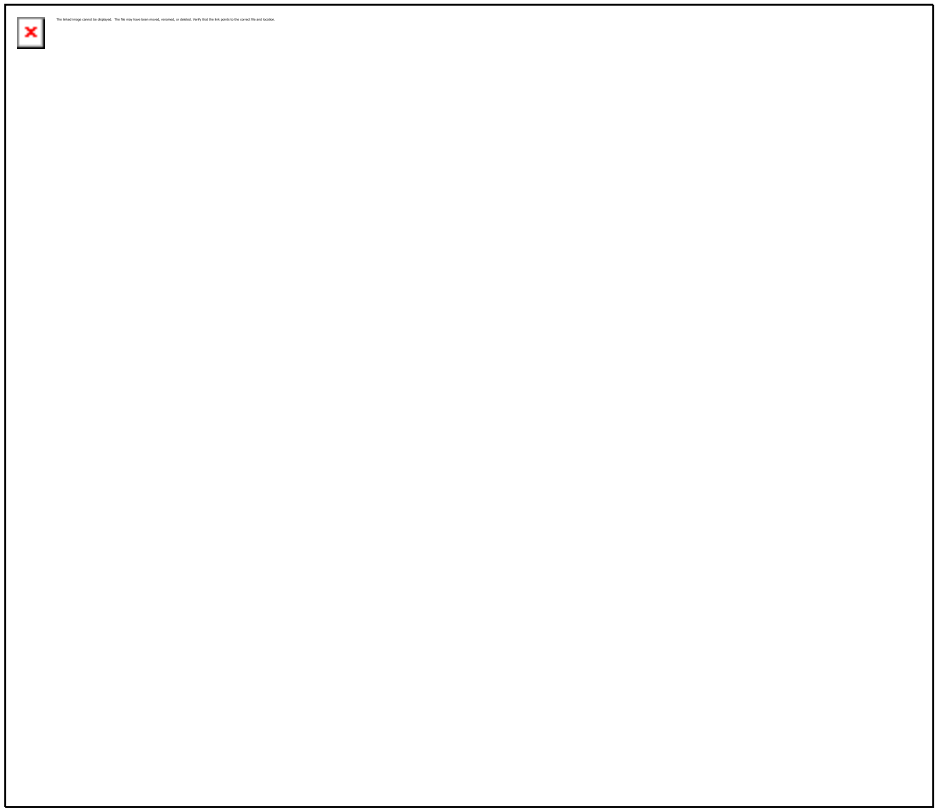


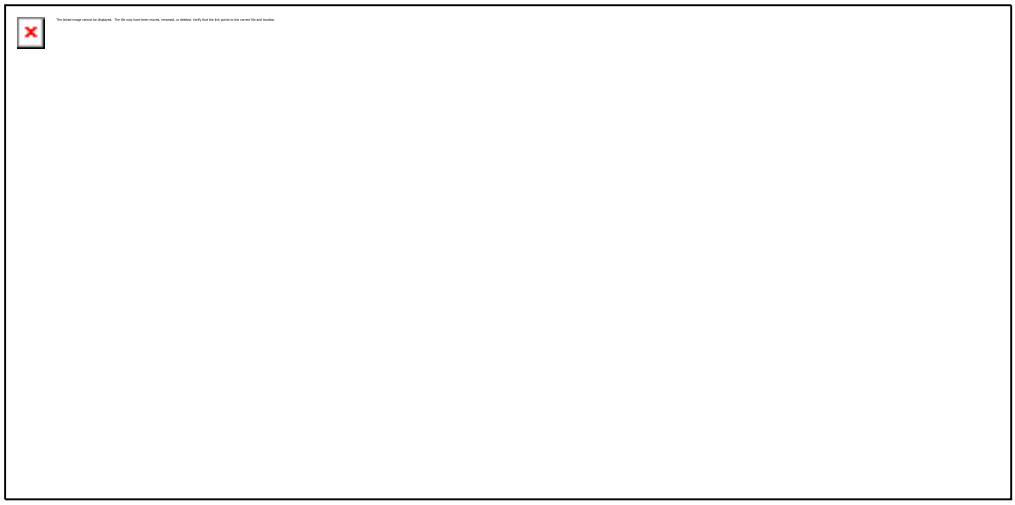


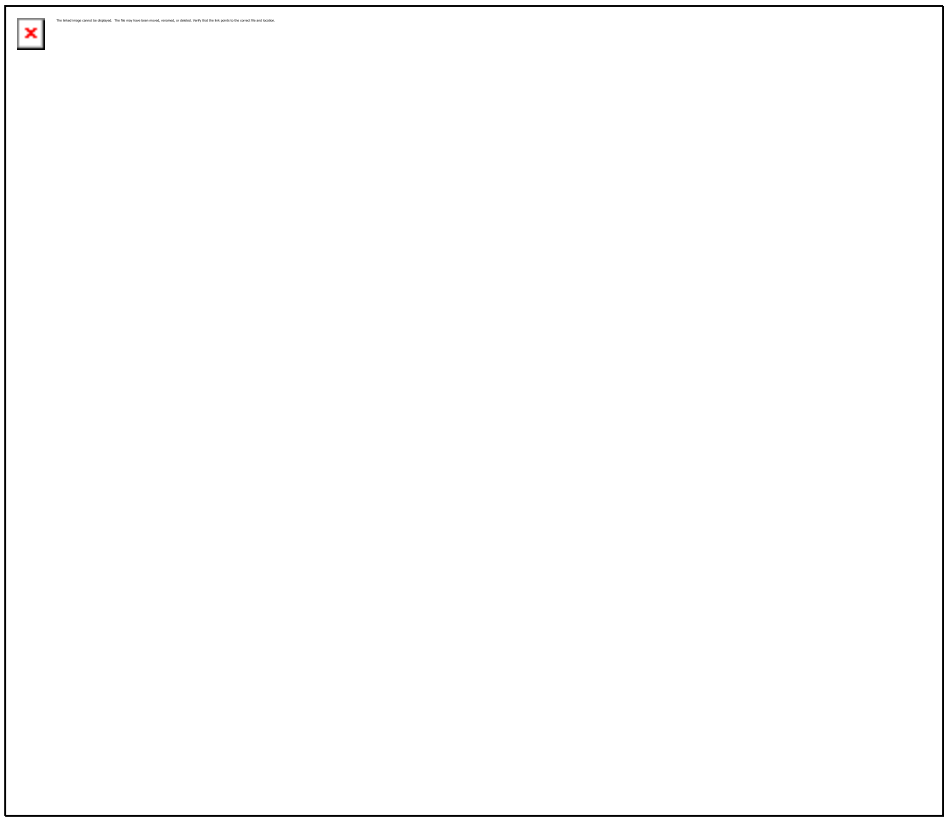


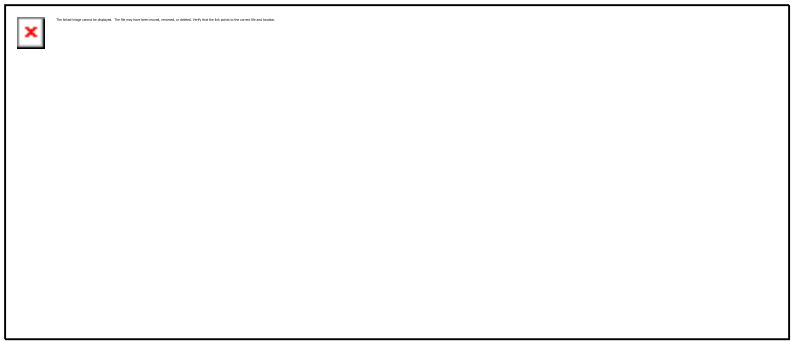


Title Deeds & Letters



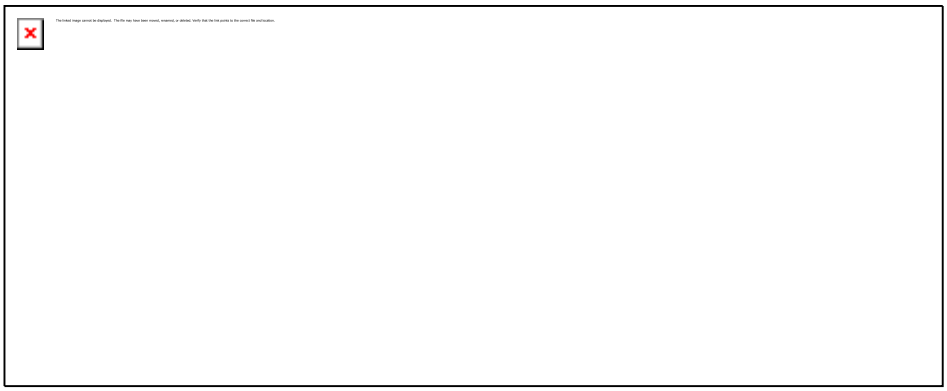


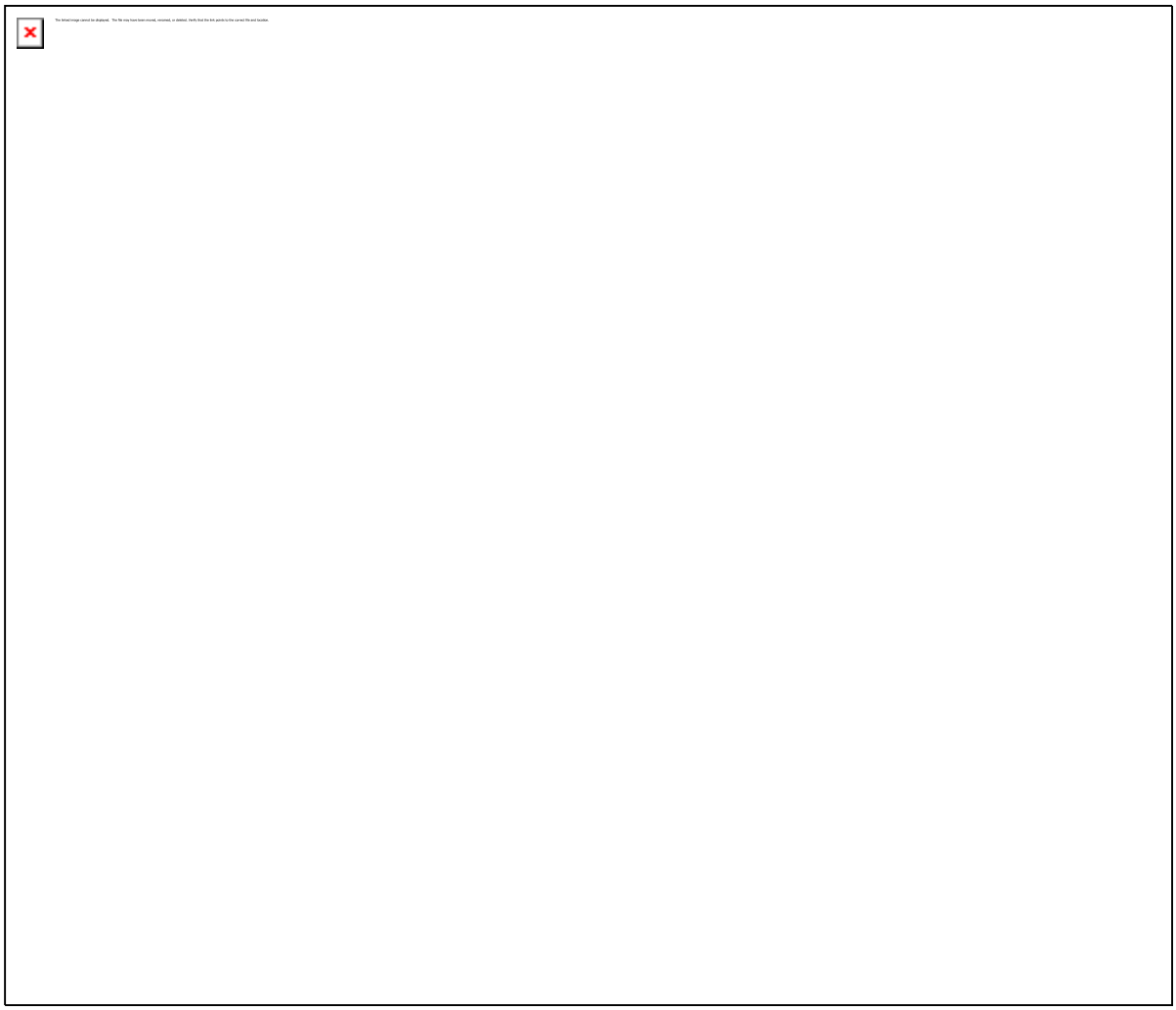


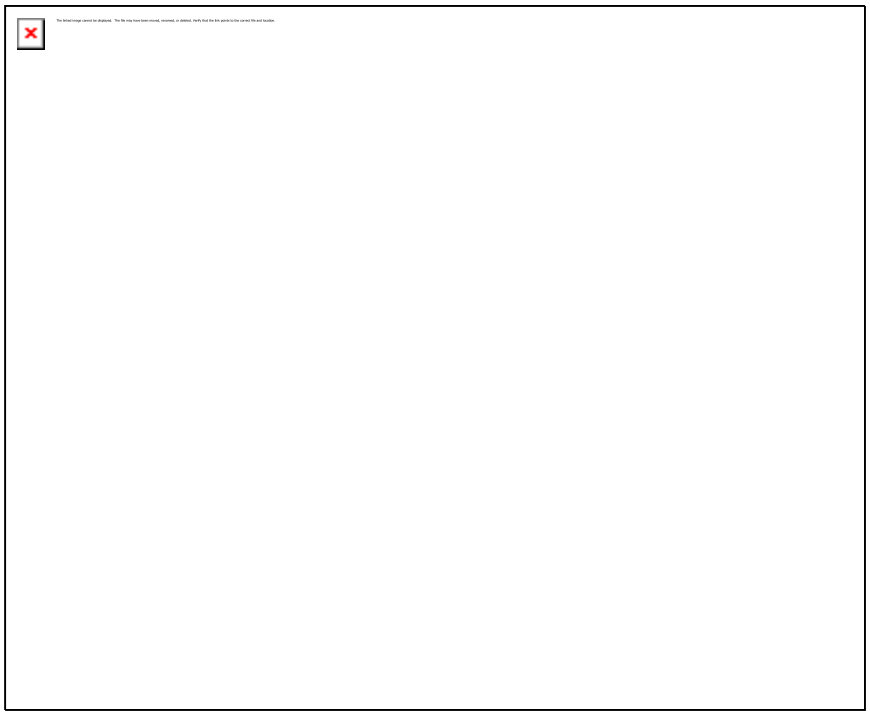


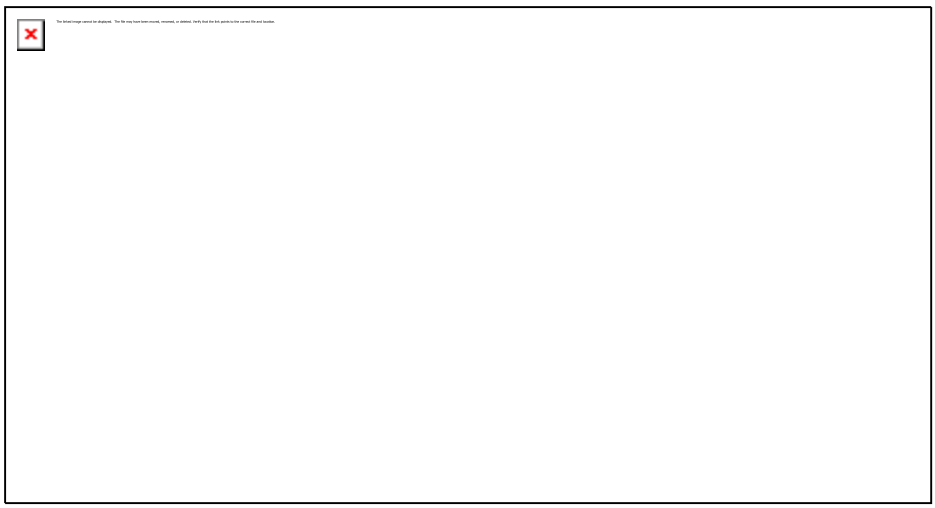
Christina Gakuhi Kubai owning Block 1/3242:

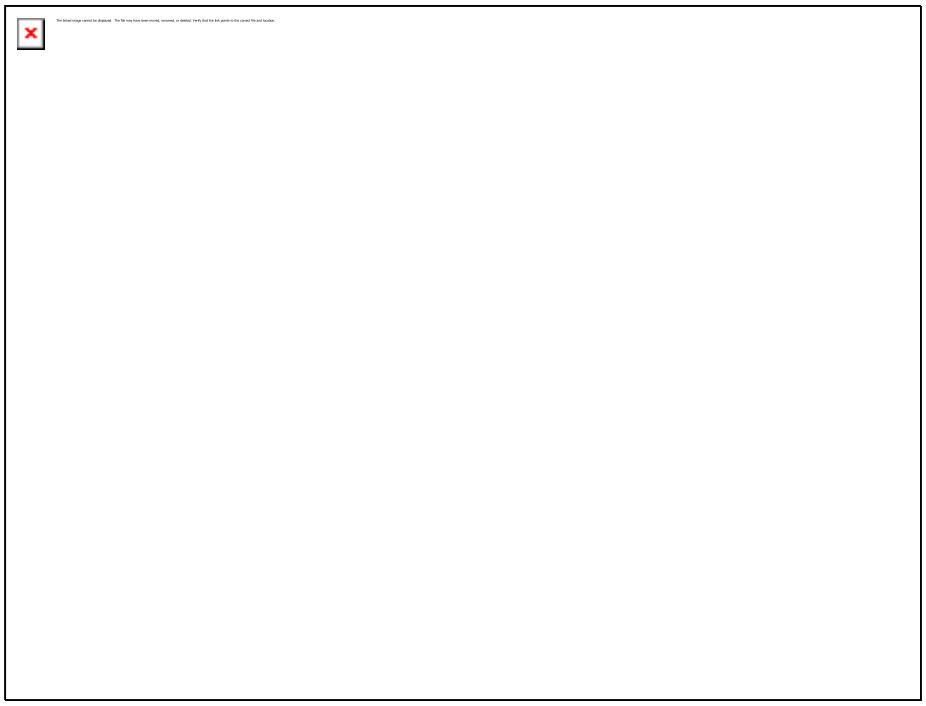
the 67.77 Acres. We have a letter from her too.

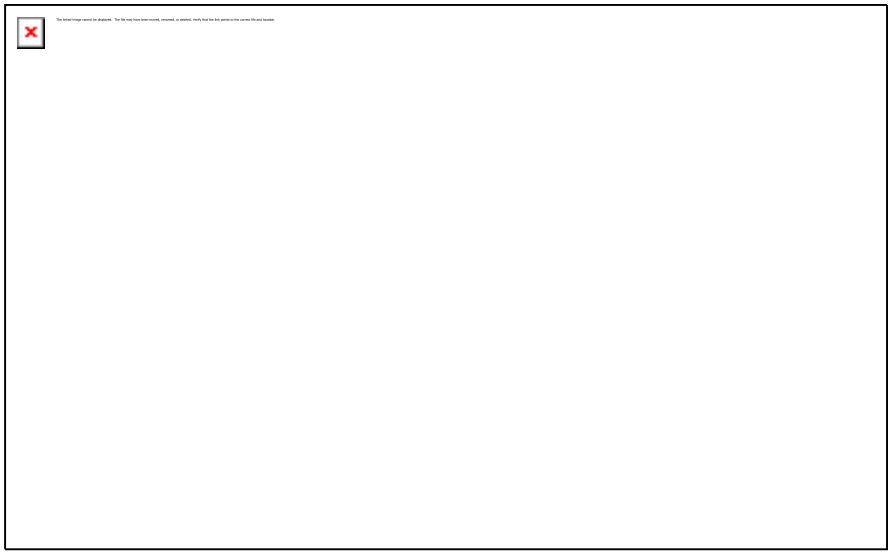


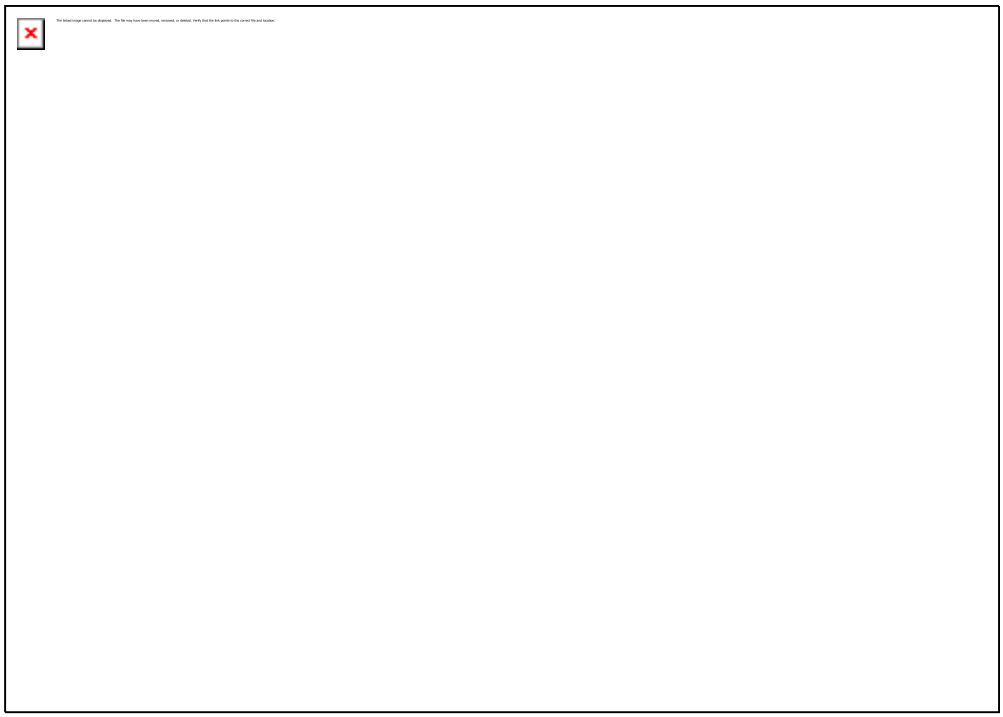


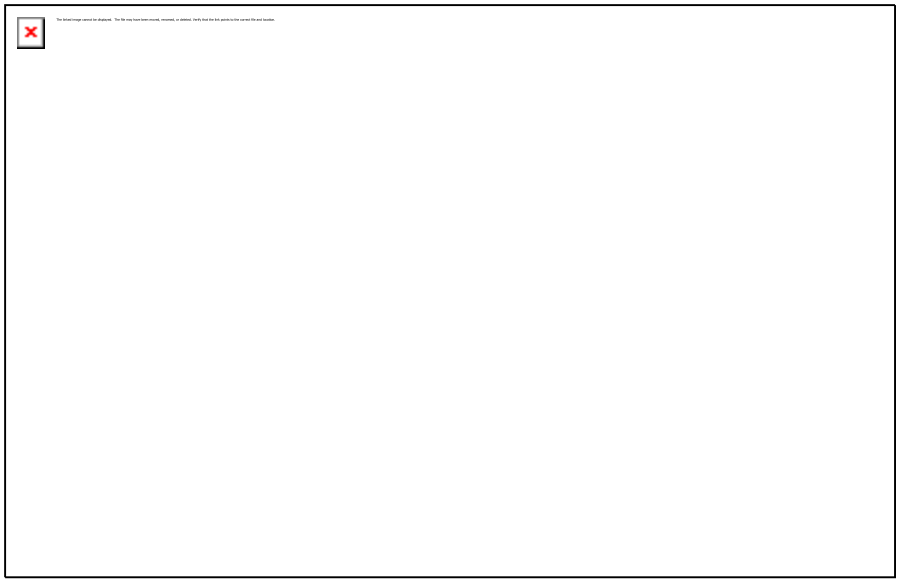


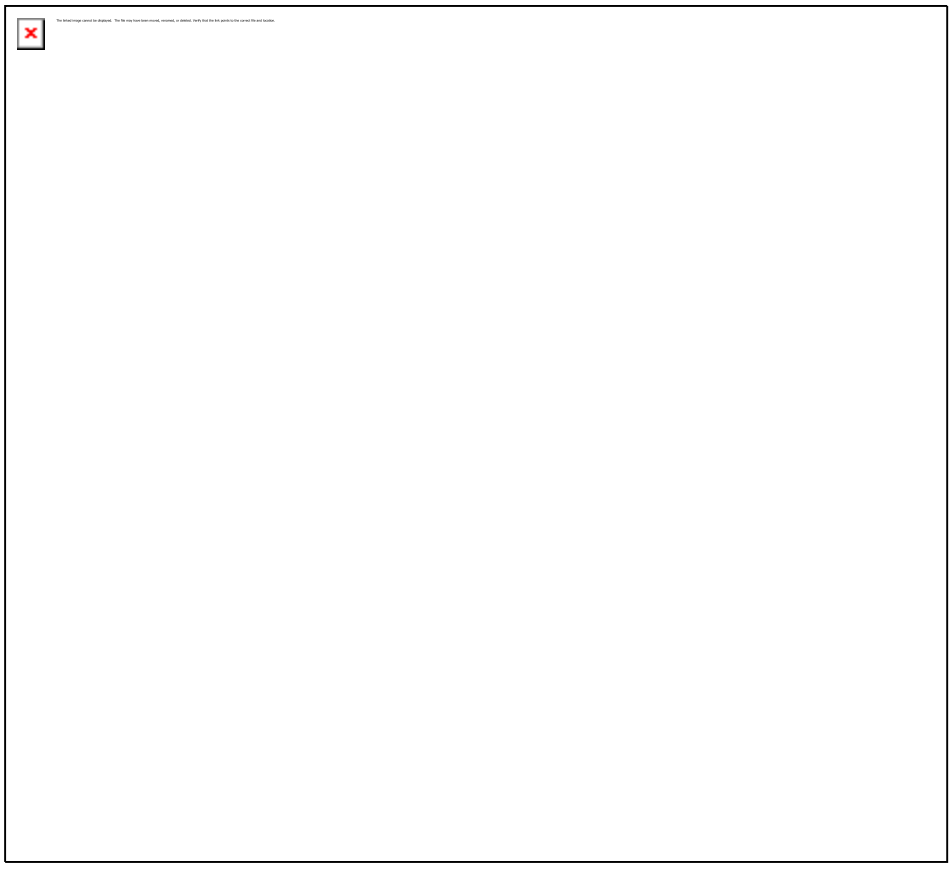


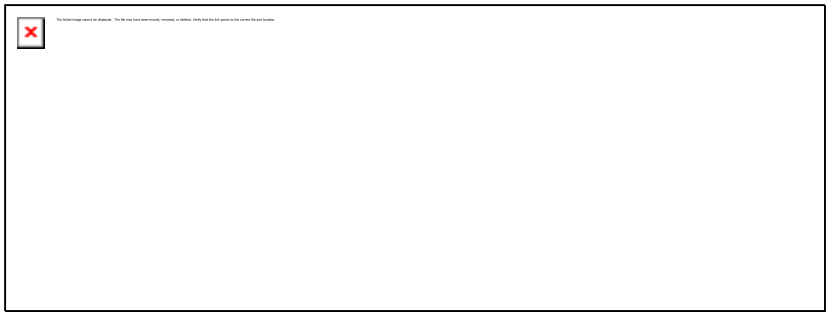


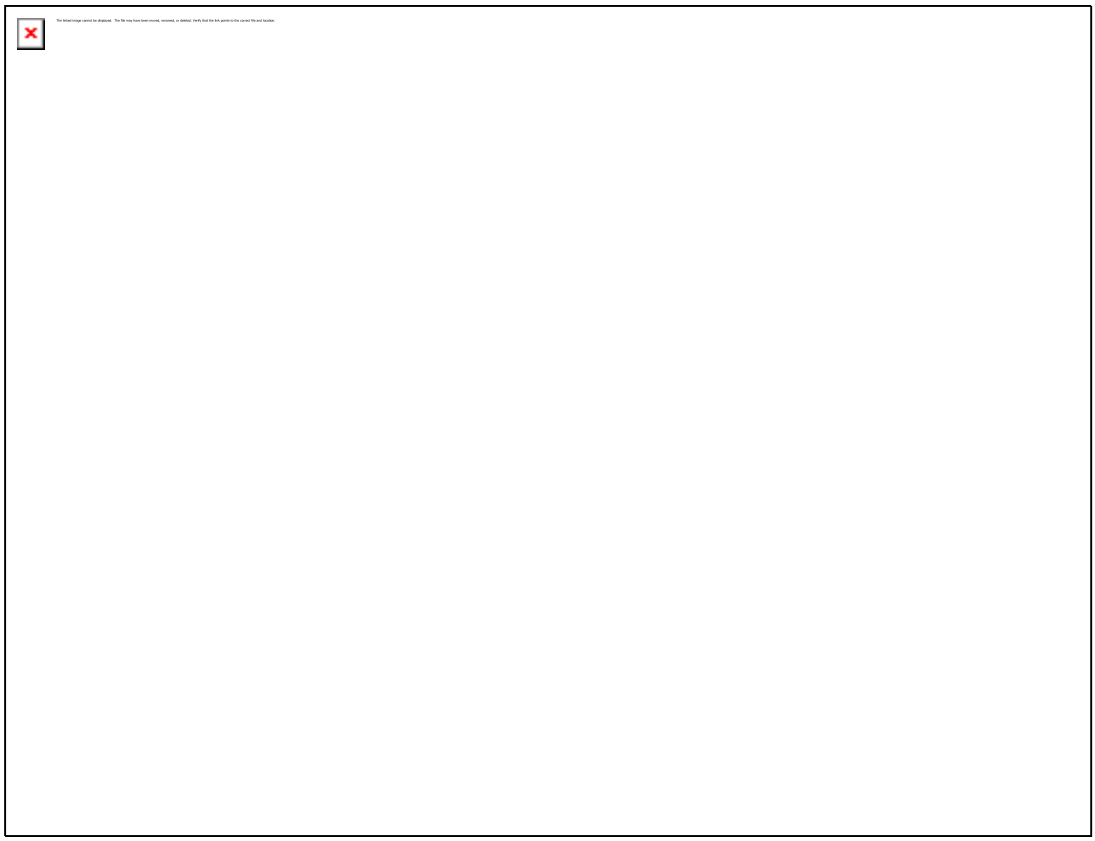


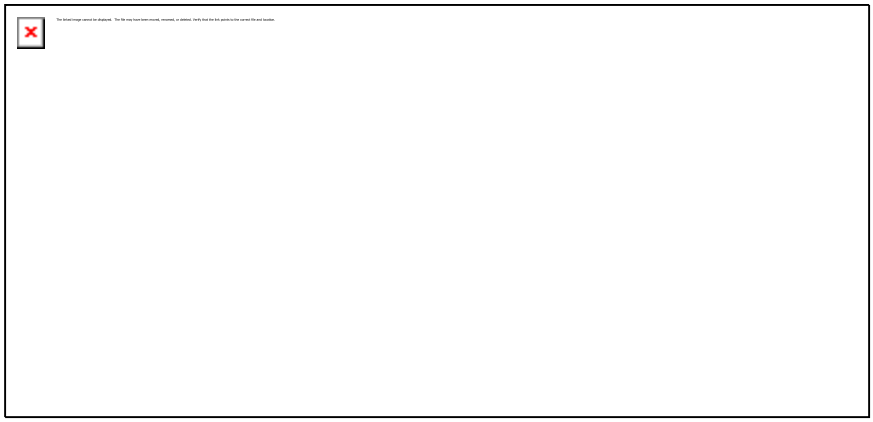


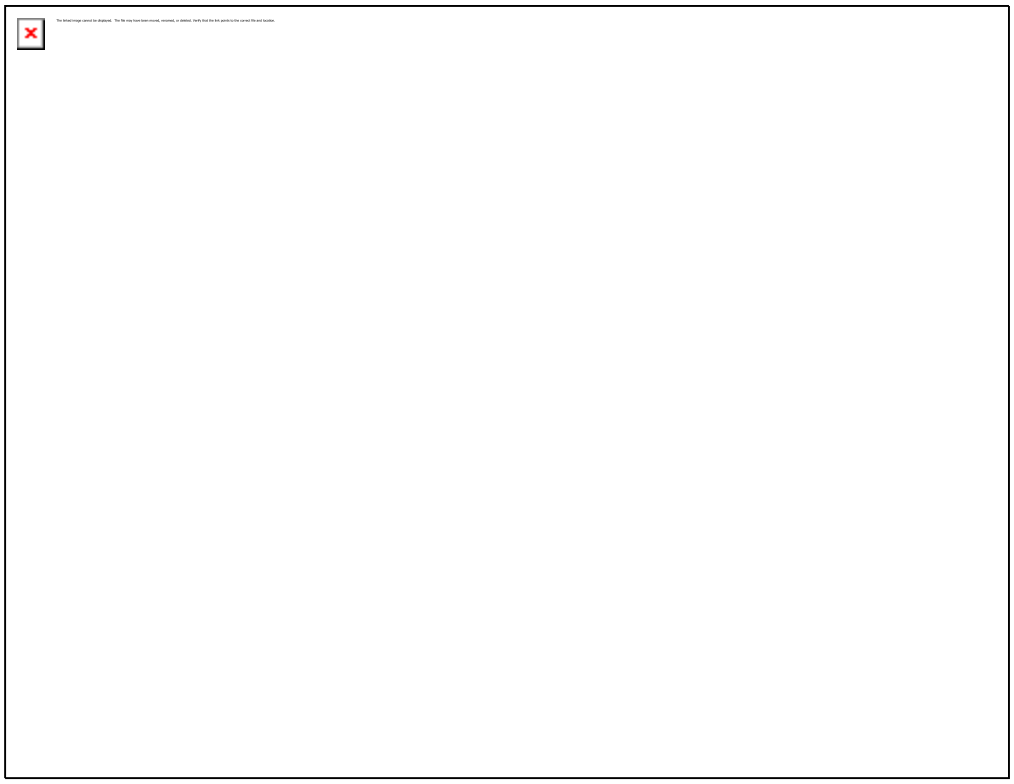


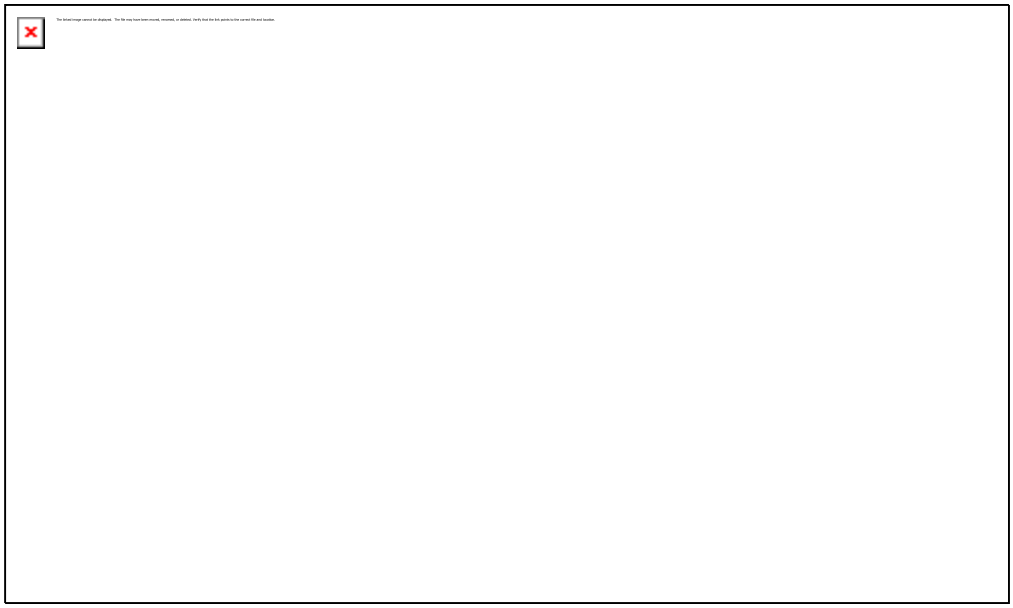


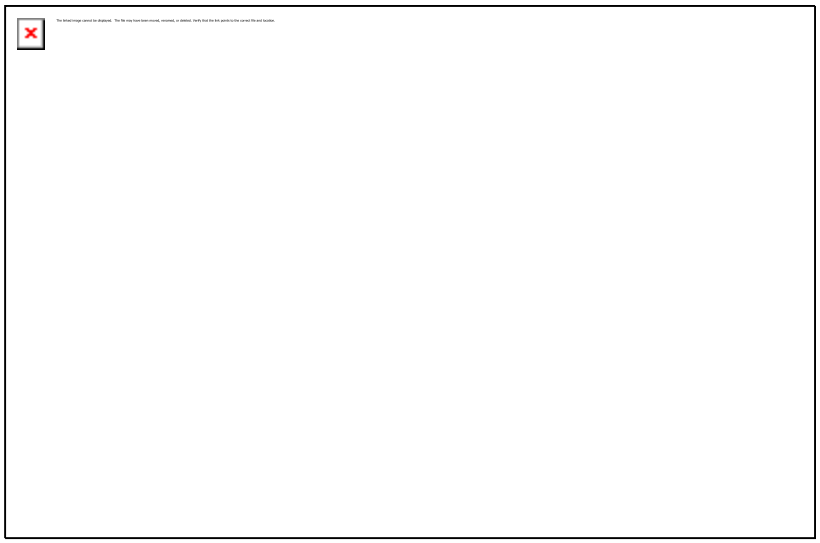


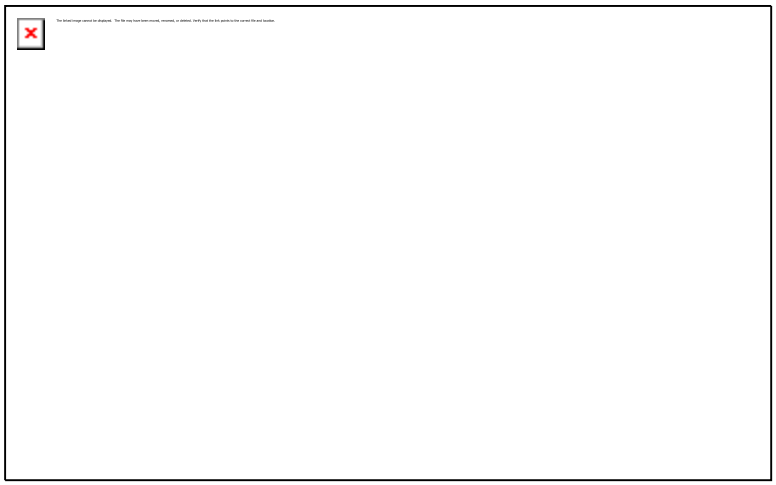












Country Data – Kenya Snap shot on Energy & Renewable Energy