

SANKO GEOTHERMAL POWER PROJECT


TRAFFIC MANAGEMENT PLAN

Version	Revision	Date	Prepared by	Checked by	Approved by
Draft	A.0	January 10, 2018	Muhsin Dervişoğulları Environmental Manager	Project Manager	General Manager of Geothermal Investments

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1. SCOPE AND OBJECTIVE

Traffic Management Plan (TMP) defines the traffic related potential impacts and the mitigation measures to be taken during drilling, construction and operation phases.

Sanko Energy and Contractors will:

- identify those responsible for carrying out and managing the procedures;
- reference the procedures and activities the Contractor will develop and implement;
- identify work to be undertaken on the roads prior to construction activities to upgrade or stabilise the roads;
- identify the routes that will be used with the estimated numbers of traffic movements, speeds and times of travel;
- justify where a route has to pass through residential areas and the measures that will be used to ensure the safety of the community and minimise the nuisance impact of traffic movements;
- identify the programme of road restoration measures that are likely to be required post construction;
- address how the Sanko and Contractors can reduce the exposure of vehicle drivers, their passengers and other road users from the hazards of road-related accidents.

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2. TURKISH STANDARDS RELATED TO TRAFFIC AND TRANSPORTATION

Sanko Energy and the Contractors should comply with the following Turkish Standards relating to traffic and transport:

- Turkish Regulation on Vehicle Production, Repair, Assembly (Official Gazette 26/10/2016 and No: 29869).
- Turkish Regulation on Exhaust Gas Emissions of Vehicles. (Official Gazette 11/03/2017 and No: 30004).
- Turkish Regulation on Highway Notice (Official Gazette 19/06/1985 and No: 18789).
- Turkish Regulation on Highway Traffic (Official Gazette 18/07/1997 and No: 23053).
- Highway Traffic Law (Official Gazette 18/10/1983 and No: 18195).

2.1. POTENTIAL IMPACTS


The main potential impacts associated with all phases of the Project include:

- temporary increases in traffic flows on the road network leading to potential for delays and congestion;
- conflicts between motorised and non-motorised forms of transport;
- short-term closures and diversions of existing transport routes (eg roads, paths) resulting in disruption to transport users;
- visual intrusion, increased roadside litter and traffic-related noise and emissions;
- impacts on natural resources where traffic needs to travel 'off-road';
- the loss of vegetative cover brought about by the construction of new roads;
- water and soil pollution from spills or accumulated contaminants on road surfaces and potential modifications to natural drainage patterns brought about by the construction of new roads;
- traffic accidents, which may result in death, injury or environmental damage.

2.2. TRAFFIC MANAGEMENT MEASURES AND PROCEDURES

The key issues addressed by the TMP in terms of mitigation measures include:

- access to construction areas and power plant;
- routing of construction traffic;
- temporary traffic control and management;
- parking facilities;

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- keeping highways clean of mud and dust;
- reducing the probability of traffic accidents.


The requirements include the following mitigation measures:

2.2.1. ACCESS ROADS

There is no need for new access roads. If it is required; in order to mitigate the potential traffic related impacts the following measures will be implemented:

- Transportation will be carried out through the routes agreed with relevant authorities.
- If the Contractor requires additional routes, a specific proposal will be submitted to Sanko for consideration and approval.
- Temporary roads will be removed when no longer needed and will be reinstated. All damage to existing roads will also be reinstated.
- The Contractor will liaise with the appropriate regulatory authorities to gain approval to use, and regularly inspect, the road infrastructure.
- Culverts will be installed as necessary where access roads cross water courses.
- Crushed rock will be applied where necessary to act as an erosion control measure at temporary access roads, turning areas and other locations where sediment causes problems. Where crushed rock is applied over wet clay it may sink in to the soil and may require the Contractor to install an appropriate filter blanket at the soil-stone interface.
- Temporary access roads will be kept free from deposits to prevent silt, oil or other materials from entering drains or watercourses. Small dams in roadside ditches may therefore be required to assist in silt retention, particularly on steep slopes.
- Access routes to be used by construction traffic will be properly signposted. This shall be sufficient to prevent vehicles from leaving the designated routes and ensure that the appropriate speed limits are enforced particularly through residential areas.
- Access and site roads will be maintained in good condition.
- Suitable measures will be implemented to avoid damage to public roads and any damage will be repaired to an equal or better standard in a timely manner.
- The Contractor will remove all temporary roads or road enlargements, except where local communities or landowners request that a new road be left in place. Sanko will advise the Contractor regarding the views of regulators, environmental considerations and the concerns of stakeholders for those roads that are to be left in place.


2.3. TRAFFIC CONTROL AND MANAGEMENT

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- In terms of traffic control, vehicles will be prohibited from reversing unattended into the drilling areas, power plant area and construction sites. Vehicles and plant shall enter and exit these areas in a forward direction, as far as possible. In addition, the Contractor will ensure that all heavy goods vehicles are equipped with audible reversing alarms.
- Clear signs, flagmen and signals will be set up where necessary. Where temporary traffic signals are required, the details and locations of the signs shall be discussed with the relevant authorities. The signs will be fixed safely and securely to ensure that they do not become detached or dislocated, and will be visible and comprehensible by all.
- Sanko and its contractors will also carry out maintenance checks to clean and re-secure signs if necessary.
- Appropriate supervision will be provided to control the flow of traffic when machinery needs to cross roads.
- Liaison with the police and other authorities will occur prior to the movement of any abnormal loads. In particular, liaison with the General Directorate of State Highways will occur prior to transportation on motorways.
- Access to commercial and residential properties shall be maintained and speed limits will be established and enforced over all construction traffic routes.
- Where roads used by children to reach schools are used, vehicle traffic will be minimised during hours that children are travelling to and from school.
- Ambulances and fire services will be consulted regarding road diversions. Road diversions will not increase the response time of these services to local communities.
- Access to residential and commercial properties will be maintained.
- If road closures are required, diversions will be planned and communicated to the authorities (including emergency services and public transport providers) and affected communities in advance and will be properly sign-posted.
- Fuel use will be minimised during the transportation of construction materials and personnel.
- A 20 km/h speed limit shall be enforced on the construction sites. The speed limit shall be 50 km/h in the cities and villages. The speed limit on the motorways and highways shall be 90km/h.

Appendix 1 provides “Checklist for Traffic Management Inspection and Audit Control” to be used by Environmental Inspectors.

2.3.1. MAINTAINING HIGHWAYS

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Sanko and its Contractors are expected to keep highways free from mud and dust and to ensure that no vehicle or other items of equipment leaving the construction base or working width, deposit soil, debris or rock on public highways or public right of ways.

Measures will be implemented to ensure that the transport of mud and dust from the site onto public highways and roads is limited. Such measures shall be developed in consultation with Sanko representative and may include:

- The use of hard core surfaces on access roads;
- The provision of an easily cleaned hardstanding area within the construction base for vehicles entering, parking and leaving;
- Fully sheeting all works vehicles carrying potentially dusty material or likely to deposit loose materials on the public highway during transit;
- The Contractor shall clean and maintain temporary and permanent roads, and shall remove mud and debris from public roads.


2.3.2. VEHICLES STANDARDS AND MAINTENANCE

With regard to vehicles standards and maintenance, Sanko will ensure that:

- All vehicles shall be maintained so that their noise and emissions do not cause nuisance to workers or local people.
- New vehicles: vehicles/equipment purchased 'as new' after contract award shall comply with the appropriate emission standards in force on the purchase date.
- Older vehicles: vehicles/equipment not purchased 'as new' after contract award shall be maintained so that noise and emissions levels are no greater than when the vehicle/ equipment was new.

APPENDIX 1

**TRAFFIC MANAGEMENT INSPECTION
AND AUDIT CHECKLIST**

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Subject of the Inspection Checklist		To be completed as follows		
		0	1	2
		Needs immediate attention	Needs attention	Compliant or not applicable
1	Are the existing roads being used to avoid the need to construct new roads?			
2	Are access roads crossing watercourses? If so;			
	a. Has a culvert / flumed crossing been installed?			
	b. Have measures been implemented to mitigate against the impact of increased sediment flows?			
3	Are the temporary roads kept free from deposits? (Are there soil piles, debris, etc.?)			
4	Is there any damage to public roads and public highways resultant from construction related traffic?			
5	Have all temporary roads been reinstated, except for those that required to be retained upon the request of the local community?			
6	Are the heavy goods vehicles equipped with audible reversing alarms?			
7	Are there warning signs, flagmen, etc. at specific locations (blind spots, bend, slope, residential areas)?			
8	Are legal permits available for the traffic route changes?			
9	Are the parking facilities signposted?			
10	Are vehicle parking, cleaning & maintenance areas kept clean (i.e., free from spills, leaks, etc.)?			
11	Are there designated emergency parking areas with proper signages?			
12	Do vehicles have "First Aid" and "Fire Extinguisher"?			
13	Did the employees have appropriate training to their position?			
14	Do the project personnel obey the project speed limits?			
15	Do the drivers of long vehicles and Heavy goods vehicles have assistant drivers to guide them on critical roads?			